

**SANITATION, INC. LANDFILL
LEWISTOWN, MONTANA
License #291
JUNE 2013 GROUNDWATER SAMPLING REPORT**

Prepared for:
Barry Damschen Consulting, LLC

Prepared by:
Hydrometrics, Inc. 
Consulting Scientists & Engineers
3020 Bozeman Avenue
Helena, MT 59601

September 2013

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SEP 19 2013 



BARRY DAMSCHEN CONSULTING, LLC

Engineering • Solid Waste Management • Grant Administration

September 13, 2013

Mary Louise Hendrickson
Solid Waste Program
Department of Environmental Quality
P. O. Box 200901
Helena, MT. 59620-0901

Dear Mary,

Please find enclosed our copy of the groundwater results for the Spring 2013 sampling event at the Sanitation Inc. landfill. The samples were collected on June 27, 2013.

As indicated in the attached report, there does not appear to be any significant changes in the quality of the groundwater from the last sampling event. In fact, the total number of reported VOC concentrations in June 2013 (17) decreased significantly from June 2012 (8).

If you have any questions, please do not hesitate to call me or Mark Walker.

Very truly yours,
BARRY DAMSCHEN CONSULTING, LLC

Barry E. Damschen, P. E.
Project Manager

Enclosure

Cc: Sanitation Inc.

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DEPT. OF ENVIRO. QUALITY
WASTE & UNDERGROUND TANK
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Hydrometrics, Inc.
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Dept. of Environmental Quality
Waste & Underground
Tank Management Bureau

3020 Bozeman Avenue
Helena, MT 59601
(406) 443-4150
Fax: (406) 443-4155
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September 18, 2013

Mr. Barry Damschen, P.E.
Barry Damschen Consulting, LLC
P.O. Box 7599
Helena, MT 59604

RE: June 2013 Groundwater Monitoring Results
Closed Sanitation, Inc. Landfill, Lewistown, MT (License #291)

Dear Barry,

Hydrometrics, under contract to Barry Damschen Consulting, LLC, has prepared this letter report to transmit the results of the June 2013 groundwater monitoring at the Closed Sanitation, Inc. Landfill in Lewistown, Montana. Sampling activities were conducted on June 27, 2013.

Groundwater Flow Results

Monitoring locations for the Sanitation, Inc. landfill are shown on Figure 1. Static water levels were collected at monitoring wells SIMW-2, SIMW-3, and SIMW-4, and at piezometer SIP-1 during the June 2013 monitoring event; no measurement was collected at piezometer SIP-2. Water level measurements and associated groundwater elevations are summarized in Table 1, and are shown on Figure 1. Groundwater hydrographs (elevation changes over time) for site wells are shown in Figure 2. The general shallow groundwater flow direction at the site is to the north and west, with water level depths ranging from about 26 to 33 feet below the wellhead measuring point (Table 1). Well SIMW-4 showed a water level increase from June 2012 to June 2013 of 1.67 feet. All other wells showed elevation decreases ranging from -0.13 at SIP-1 to -0.56 at SIMW-3. As observed during previous monitoring events, groundwater level fluctuations were largest at well SIMW-4, likely due to varying influence from the nearby detention pond (Figure 1).

The hydraulic gradient at the site appears to increase with proximity to the small draw to the north. An estimated average gradient of 0.17 was calculated for the site, based on the distance between the 4090-ft and 4040-ft groundwater elevation contours with a flow direction toward SIMW-4 (Figure 1). The groundwater seepage velocity can be estimated with previously determined (Entranco, 2002) values for aquifer porosity (estimated at 0.35), and hydraulic conductivity (9.2 ft/day), using the formula $V_s = KI/n_e$ where V_s = seepage velocity (ft/day); K = hydraulic conductivity (ft/day); I = hydraulic gradient (dimensionless); and n_e = porosity (dimensionless).

Using the values cited above, the estimated groundwater seepage velocity near well SIMW-4 for June 2013 is 4.5 ft/day or about 1640 ft/year.

Groundwater Quality Results

Water quality samples were collected from wells SIMW-2, SIMW-3, and SIMW-4 by bailing. Well SIMW-1 was previously removed from the groundwater monitoring program, so no sample or water level was collected at this well. Quality control (QC) samples included a field duplicate (collected at SIMW-3), a trip blank, and standard internal laboratory QC samples. Samples were submitted to Energy Laboratories in Helena, Montana for analysis of Solid Waste Table 1 inorganic parameters and volatile organic compounds (VOCs). Field sampling notes and laboratory analytical reports are in Attachment 1.

Trend plots were compiled for selected parameters and are in Attachment 1. Statistical Reports are located on the compact disc in Attachment 2 and field sampling notes and laboratory analytical reports are in Attachment 3.

Quality Control Results

A trip blank was submitted, but due to instrument error, the trip blank was not analyzed as shown in Attachment 2. The duplicate sample pair showed very good agreement for inorganic parameters, compared with the control limits presented in EPA guidance (EPA, 2010). Suggested duplicate sample control limits for inorganic parameters are <20% relative percent difference (RPD) for duplicate pairs with results $\geq$ five times the reporting limit (RL), or $\pm$ the reporting limit for duplicate pairs with one or both results < five times the reporting limit. The June 2013 inorganic groundwater data for the closed Sanitation, Inc. landfill sample-duplicate pair showed RPDs ranging from 0.0% to 13.3%, with an average of 3.7%. Dissolved barium, nickel, selenium and zinc results agreed to within the $\pm$ RL control limit. Dissolved lead (0.0009 mg/L and 0.0004 mg/L in the sample-duplicate pair) slightly exceeded the $\pm$ RL control limit of 0.0003 mg/L; however, this exceedance is not considered significant in terms of data evaluation at the low lead concentrations quantified.

EPA guidance for organic data review (EPA, 2008) does not list suggested control limits for duplicate samples. However, the RPDs for 1,1,1-trichloroethane (9.8%), and trichlorofluoromethane (0.0%) in the June 2013 sample-duplicate pair demonstrated good agreement.

Note that for sample-duplicate pairs, the higher of the two values reported is retained in the database and used for statistical testing purposes (or the lower of the two values for pH).

It should be noted that, in order to achieve the required reporting values (RRVs) in the current (October 2012) version of MDEQ Circular DEQ-7, and in accordance with current MDEQ Solid Waste Section guidance, lower laboratory reporting limits were used for many dissolved metals during the June 2013 monitoring event, compared with previous typical reporting limits. The table below summarizes the reporting limit changes.

Parameter	Historic Reporting Limit (mg/L)	June 2013 Reporting Limit (mg/L)
antimony	0.005	0.0005
arsenic	0.005	0.001
barium	0.1	0.003
beryllium	0.001	0.0008
cadmium	0.001	0.00003
chromium	0.01	0.01
cobalt	0.01	0.01
copper	0.01	0.002
iron	0.03	0.02
lead	0.01	0.0003
mercury	0.001	0.000005
nickel	0.01	0.002
selenium	0.005	0.001
silver	0.005	0.0002
thallium	0.005	0.0002
vanadium	0.1	0.1
zinc	0.01	0.008

In many cases, the updated RRV-based reporting limits are significantly lower than the historic limits. These reporting limit changes will impact the statistical analysis of metals data, since metals which were previously reported as consistently below the detection limit may now be quantified at concentrations several orders of magnitude lower than the previous limit. Until additional data points are obtained to develop a more robust data set at the new lower reporting limits, it is likely that the power of the statistical tests to identify statistically significant exceedances and/or trends will be diminished.

Statistical Testing Results

Intrawell prediction limits were used for statistical testing of the June 2013 groundwater data, since none of the three wells currently monitored can be considered upgradient of the waste fill areas. Baseline data for each parameter at each well included all appropriate data prior to the current sampling event. 'Historical' outliers were identified and removed from the baseline data set as described in the June 2009 statistical report (Hydrometrics, 2010), and as recommended in a subsequent letter from MDEQ (MDEQ, 2010). In addition, the following results exceeding

prediction limits for June 2009, June 2010, July 2011, and June 2012 were removed from the database for distribution and prediction limit testing:

Well	Date	Parameter
SIMW-2	6/14/2010	conductivity
SIMW-2	6/14/2010	iron
SIMW-2	6/25/2012	conductivity
SIMW-3	6/22/2009	sulfate
SIMW-3	6/14/2010	conductivity
SIMW-3	6/14/2010	sulfate
SIMW-3	6/25/2012	conductivity
SIMW-3	6/25/2012	iron
SIMW-3	6/25/2012	sulfate
SIMW-4	6/14/2010	pH

Note that these results are shown on the trend plots in Attachment 1 (and are included for trend testing if necessary). Outliers that were removed for purposes of intrawell statistical testing are tabulated in Attachment 2.

The Shapiro-Wilks Test of Normality was used to determine the distribution of the data (after removal of outliers) for each parameter at each well. June 2013 results were then compared with parametric or nonparametric prediction limits, based on the results of the normality test. In some cases (due to recently lowered metals reporting limit), the maximum value observed in the background data set was used as the prediction limit. Tests for trend (Mann-Kendall or Sen's Slope) were conducted for any parameters showing a prediction limit exceedance, except in cases where insufficient quantifiable data for trend testing was available. The intrawell prediction limit results are summarized in Table 2, and detailed statistical reports are in Attachment 2.

Inorganic Parameters

In general, inorganic parameter concentrations for June 2013 were similar to values observed during recent monitoring events. Groundwater pH in the Sanitation, Inc. monitoring wells ranged from 6.8 to 7.0 in June 2013, and SC values ranged from 1240 μ mhos/cm at SIMW-3 to 2300 μ mhos/cm at SIMW-4 (Table 2). The nitrate + nitrite concentration dropped at well SIMW-3 from 11.5 mg/L in June 2012 to 9.3 mg/L in June 2013, below the DEQ-7 groundwater standard of 10 mg/L. Detectable dissolved metals in June 2013 groundwater samples included the following: barium, nickel, and zinc at well SIMW-2; barium, iron, lead, nickel, selenium, and zinc at well SIMW-3; and barium, cadmium, copper, lead, mercury, nickel, and zinc at well SIMW-4 (Table 2). For many of these parameters, the June 2013 results represented the first detectable concentration observed during the monitoring period. The increase in detectable dissolved metals concentrations is attributable to the establishment of lower reporting limits for many constituents, as discussed above.

Prediction limit exceedances were noted for conductivity, chloride, and sulfate at well SIMW-3, and for nitrate + nitrite at well SIMW-4 (Table 2). In addition, low concentrations of dissolved metals exceeded prediction limits (equivalent to the new low-level reporting limits) at all three wells, including barium at well SIMW-2, barium and lead at well SIMW-3, and barium, cadmium, copper, lead, and mercury at well SIMW-4 (Table 2). Statistically significant increasing trends were obtained for all inorganic prediction limit exceedances with the exception of chloride at SIMW-3. Trend testing was not conducted for the dissolved metals parameters, due to a lack of sufficient quantifiable concentrations (above the reporting limit) to evaluate trends.

The trend plots in Attachment 1 show slightly increasing trends for conductivity at both SIMW-2 and SIMW-3 over about the last eight years, while chloride trends appear relatively stable. Sulfate concentrations have increased at well SIMW-3 since about 2008, while concentrations at the other two site wells appear to have decreased over the same period (Attachment 1). The nitrate + nitrite concentration at SIMW-4 in June 2013 (2.14 mg/L) represents the maximum concentration observed at this well to date; however, this concentration remains lower than that observed at the other two site monitoring wells (Table 2).

The observed barium, cadmium, copper, lead, and mercury concentrations in June 2013 groundwater samples were the first detectable concentrations of these constituents at site wells. Additional data collection at the lower metals reporting limits now in effect will be required to further establish baseline concentrations and to evaluate intrawell prediction limit exceedances and/or trends for these parameters. None of the metals that have been detected in site groundwater previously (iron, nickel, selenium, and zinc) showed prediction limit exceedances in June 2013.

Organic Parameters

Similar to previous monitoring events, a number of low-level VOC parameters were reported in the June 2013 samples for each of the three sampled wells. In most instances, results were qualified 'J' by the laboratory as present, but below the laboratory reporting limit, as follows:

Site	6/13 VOCs Reported (µg/L)
SIMW-2	1,1-dichloroethane (0.23 J)
	tetrachloroethene (0.22 J)
	1,1,1-trichloroethane (0.75)
SIMW-3	1,1,1-trichloroethane (0.43 J)
	trichlorofluoromethane (0.76)
SIMW-4	benzene (0.37 J)
	chlorobenzene (0.46 J)

The number of VOCs reported in June 2013 samples (seven) was significantly less than the number reported in June 2012 samples (eighteen). Vinyl chloride, which was reported at SIMW-4 at 0.21 µg/L in June 2012 (slightly exceeding the DEQ-7 groundwater standard of 0.2 µg/L), was reported at <0.4 µg/L in June 2013.

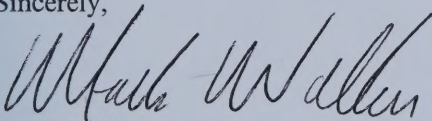
Mann-Kendall trend tests were conducted for each of the reported VOC parameters. All parameters also yielded statistically significant increasing trends (Table 2). Inspection of the trend plots in Attachment 1, however, shows that many VOC concentrations follow a typical pattern of periods of sporadic low-level detections interspersed with non-detectable values, with concentrations remaining relatively stable over time. It appears that the statistically significant increasing trends for VOCs noted in this report are due in large part to the replacement of below detect values with zero prior to trend testing.

Summary

Groundwater elevation data for the June 2013 groundwater-monitoring event at the Closed Sanitation, Inc. Landfill were consistent with historic results, indicating flow to the north and west and an approximate seepage velocity of 4.5 ft/day. Groundwater samples collected in June 2013 also showed results consistent with previous data, in terms of inorganic parameter prediction limit exceedances, trends, and reported VOC concentrations. A number of dissolved metals (barium, cadmium, copper, lead, and mercury) were reported for the first time in the monitoring period, due to the use of lower metals reporting limits for the June 2013 monitoring event. Low (J-qualified) VOC concentrations were reported at all three monitoring wells, along with increasing trend test results for most of these parameters. However, as shown on the trend plots, detected VOC parameters show similar patterns of sporadic low values interspersed with below detect values, and increasing trend test results are largely a function of replacement of nondetect values with zero for purposes of trend testing. The total number of reported VOC concentrations in June 2013 (seven) decreased significantly from June 2012 (eighteen).

If you have any questions regarding this data report, please feel free to contact me at (406) 443-4150, Ext. 146.

Sincerely,



Mark Walker
Environmental Scientist

Enclosures

c: Closed Sanitation, Inc. Landfill
Barry Damschen Consulting, LLC

REFERENCES

- Entranco, 2002. Sanitation, Inc. Letter Report from Bruce Siegmund to Pat Potts, MDEQ dated March 21, 2002.
- EPA, 2008. USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review. Office of Superfund Remediation and Technology Innovation, EPA 540-R-08-01, June 2008.
- EPA, 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities -- Unified Guidance. Office of Resource Conservation and Recovery, Program Implementation and Information Division, EPA 530-R-09-007, March 2009.
- EPA, 2010. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review. Office of Superfund Remediation and Technology Innovation, EPA 540-R-10-011, January 2010.
- Hydrometrics, 2010. Sanitation, Inc. Landfill, Lewistown, Montana -- June 2009 Groundwater Sampling Report. Prepared for Barry Damschen Consulting, LLC. May 2010.
- MDEQ, 2010. Letter to Mr. William Spoja (Sanitation Inc.) from Mr. Martin van Oort (MDEQ) RE: Closed Sanitation Inc. Landfill -- Fergus County -- License #291, June 2009 Groundwater Sampling Report. Dated June 2, 2010.

TABLES

TABLE 1. WATER LEVEL MEASUREMENT RESULTS

Well	June 2013 Static Water Level (ft bmp)	June 2013 Groundwater Elevation (ft)
SIMW-2	33.11	4090.6
SIMW-3	28.61	4082.3
SIMW-4	26.9	4051.17
SIP-1	33.28	4086.96
SIP-2	NM	NM

NOTES: bmp = below measuring point

TABLE 2. JUNE 2013 INTRAWELL PREDICTION LIMIT SUMMARY
Closed Sanitation, Inc. Landfill, Lewistown, Montana

Parameter	SIMW-2			SIMW-3			SIMW-4		
	Dist ¹	PL ²	Value	Dist ¹	PL ²	Value	Dist ¹	PL ²	Value
pH (s.u.)	N(95)	6.3-8.2	6.8	N(95)	6.4-8.4	7.0	N(95)	6.4-7.5	6.8
SC (µmhos/cm)	NN	1548	1510	In-N(99)	1229	1240**	N(99)	3535	2300
chloride (mg/L)	N(95)	81	34	N(95)	38	39*	N(95)	346	200
sulfate (mg/L)	N(95)	259	140	NN	162	210**	N(95)	375	140
COD (mg/L)	N(95)	18	9	In-N(95)	59	8	N(95)	191	71
nitrate + nitrite (mg/L as N)	N(95)	4.69	2.40	N(95)	12.9	9.3	NN	1.66	2.14**
barium (diss) (mg/L)	ND	0.003	0.04 #	ND	0.003	0.011 #	ND	0.003	0.043 #
cadmium (diss) (mg/L)	NC	NC	<0.0001	NC	NC	<0.00003	ND	0.00003	0.00041 #
copper (diss) (mg/L)	NC	NC	<0.002	NC	NC	<0.002	ND	0.002	0.003 #
iron (diss) (mg/L)	NC	NC	<0.02	NN	0.67	0.26	NC	NC	<0.02
lead (diss) (mg/L)	NC	NC	<0.0003	ND	0.0003	0.0009 #	ND	0.00	0.0005 #
mercury (diss) (mg/L)	NC	NC	<0.000005	NC	NC	<0.000005	ND	0.000005	0.0000067 #
nickel (diss) (mg/L)	Max	0.07	0.002	Max	0.11	0.002	N(95)	0.07	0.041
selenium (diss) (mg/L)	NC	NC	<0.001	N(95)	0.026	0.022	NC	NC	<0.001
zinc (diss) (mg/L)	In-N(95)	0.13	0.014	NN	0.03	0.015	N(95)	0.053	0.034
benzene (µg/L)	NC		<0.5	NC		<0.5	ND		0.37 (J)**
chlorobenzene (µg/L)	NC		<0.5	NC		<0.5	ND		0.46 (J)**
1,1-dichloroethane (µg/L)	ND		0.23 (J)**	NC		<0.5	NC		<0.5
tetrachloroethene	ND		0.22 (J)**	NC		<0.5	NC		<0.5
1,1,1-trichloroethane (µg/L)	ND		0.75**	ND		0.43 (J)**	NC		<0.5
trichlorofluoromethane (µg/L)	NC		<0.5	ND		0.76**	NC		<0.5

NOTES: ¹ Dist = Distribution; test for normality was conducted using the Shapiro-Wilks test.

N(X) = data normally distributed at X% level of significance

In-N(X) = data In-normally distributed at X% level of significance

NN = data not normally or In-normally distributed at 95% or 99% level of significance.

ND = baseline data below detection limits.

Max = insufficient data at lower detection limits to determine distribution; maximum detectable previous value set as prediction limit

² PL = Prediction limits; calculated as follows:

Normal or In-normal distribution: parametric intrawell prediction interval (99% one-sided, two-sided for pH)

Non-normal distribution: non-parametric intrawell prediction interval (99% one-sided, two-sided for pH)

ND: any detectable concentrations in compliance wells are considered significant

Bold values indicate statistically significant results.

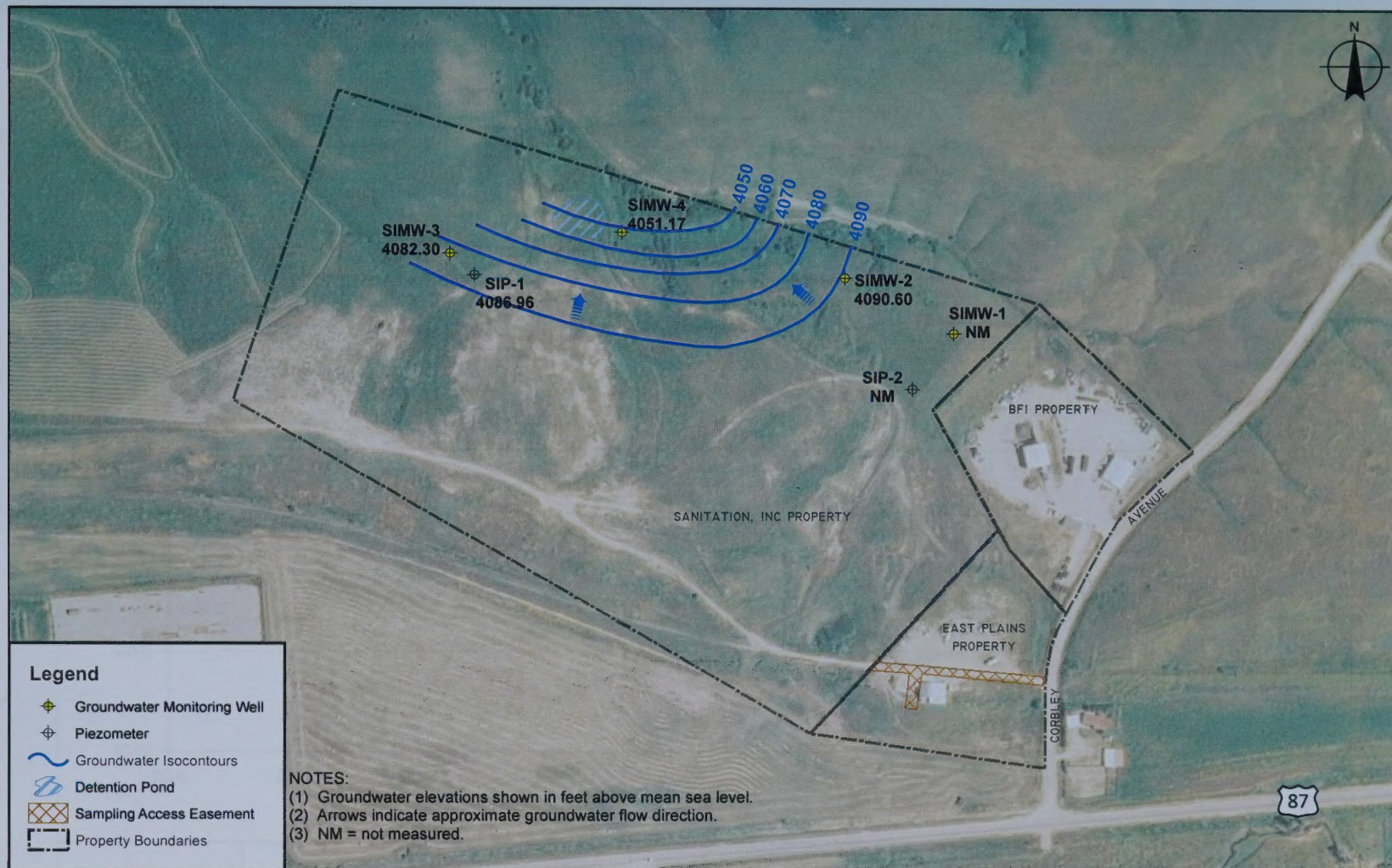
NC = not calculated (most recent sample below detection limit).

#Trend test not conducted due to limited data points above reporting limits

*Trend test indicated no significant increasing (or decreasing for pH) trend.

**Trend test indicated a significant increasing trend.

FIGURES

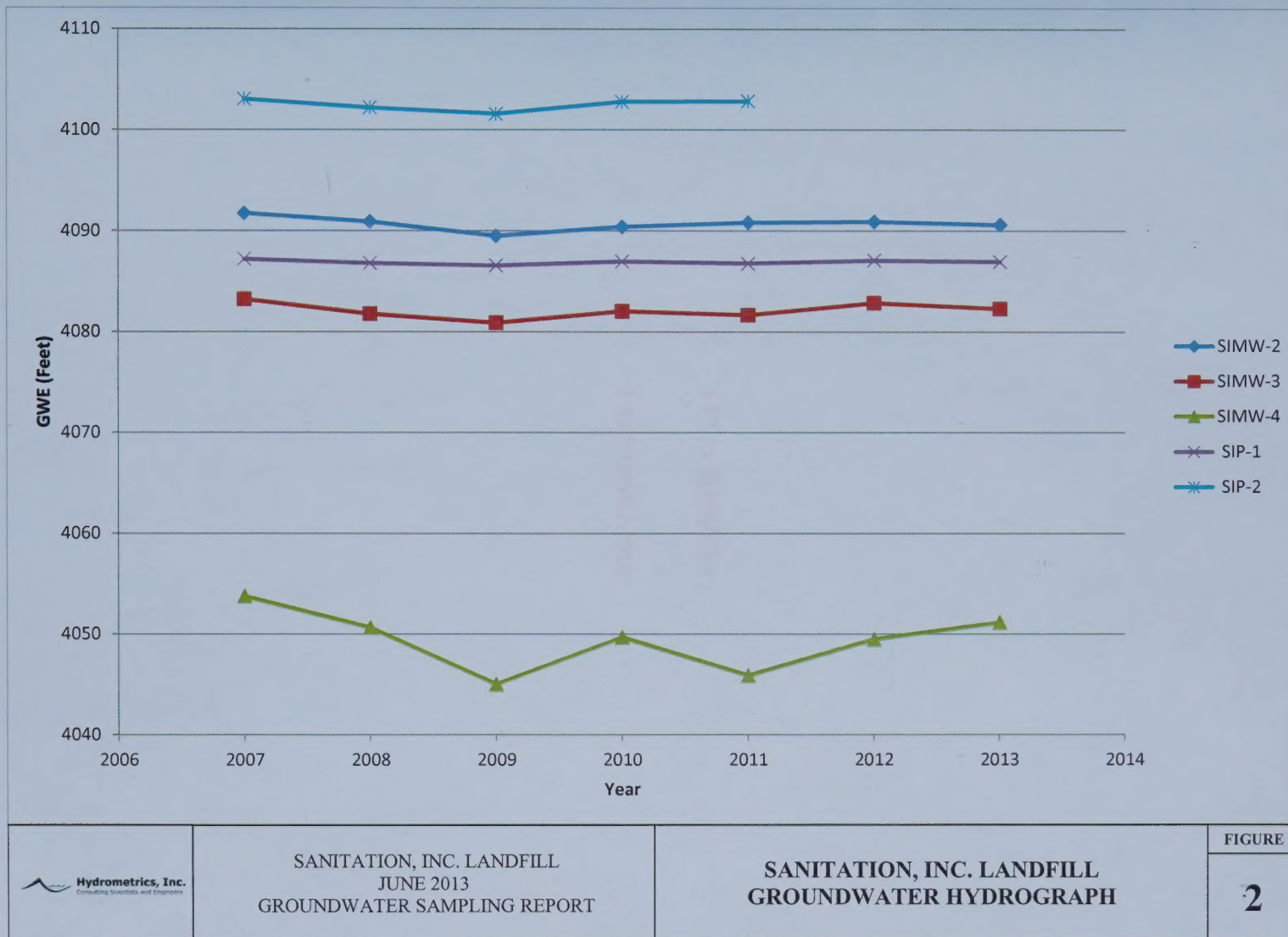


Closed Sanitation, Inc. Landfill
June 2013 Groundwater Monitoring Report

JUNE 2013
GROUNDWATER MONITORING LOCATIONS
AND GROUNDWATER ELEVATIONS

FIGURE

1



ATTACHMENT 1

TREND GRAPHS



Conductivity
Multi-Well Time-Series Graph



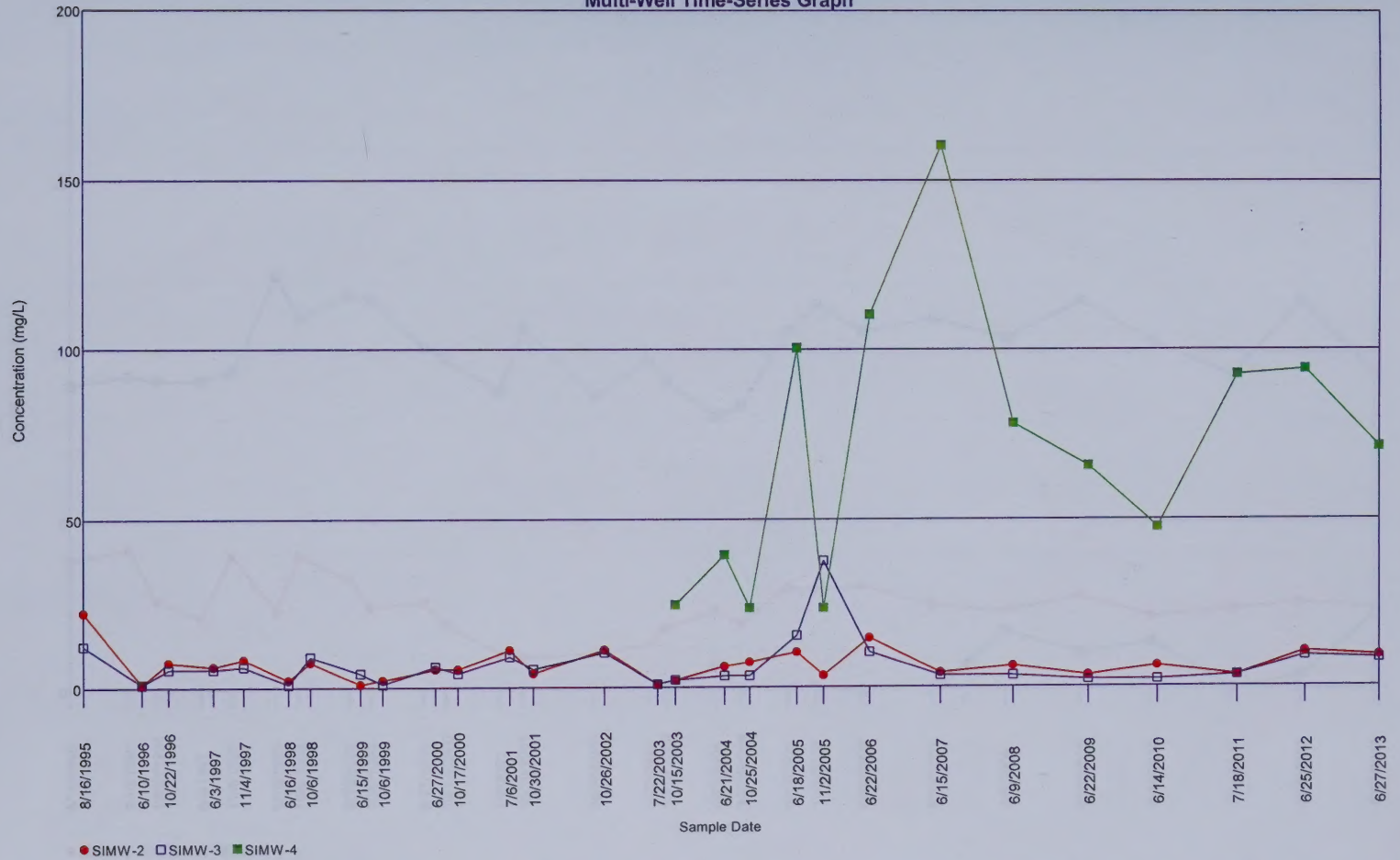
Chloride
Multi-Well Time-Series Graph



Sulfate
Multi-Well Time-Series Graph



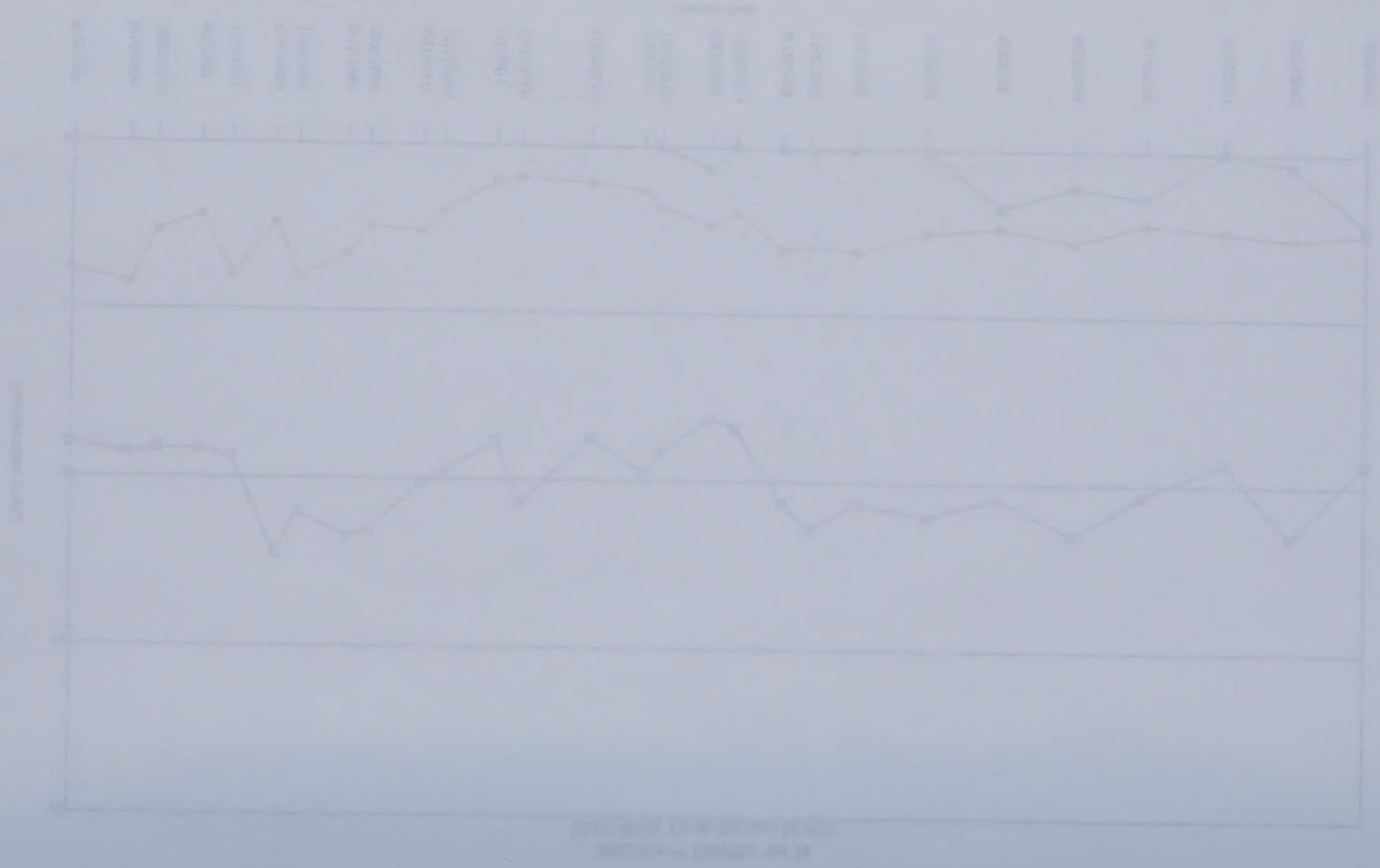
Oxygen Demand, Chemical (COD) Multi-Well Time-Series Graph



Nitrate + Nitrite as N
Multi-Well Time-Series Graph



Estimated Annual Income



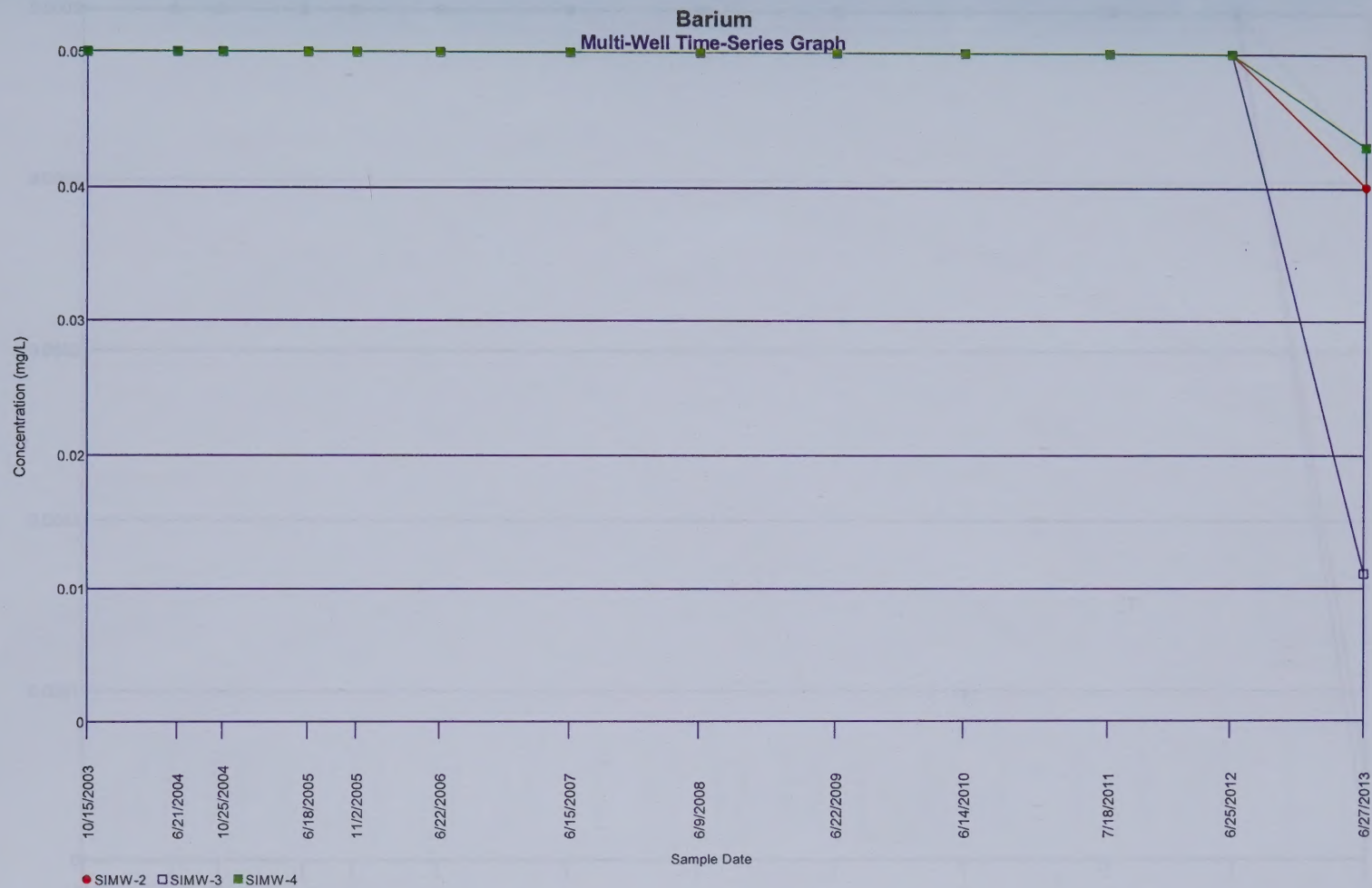
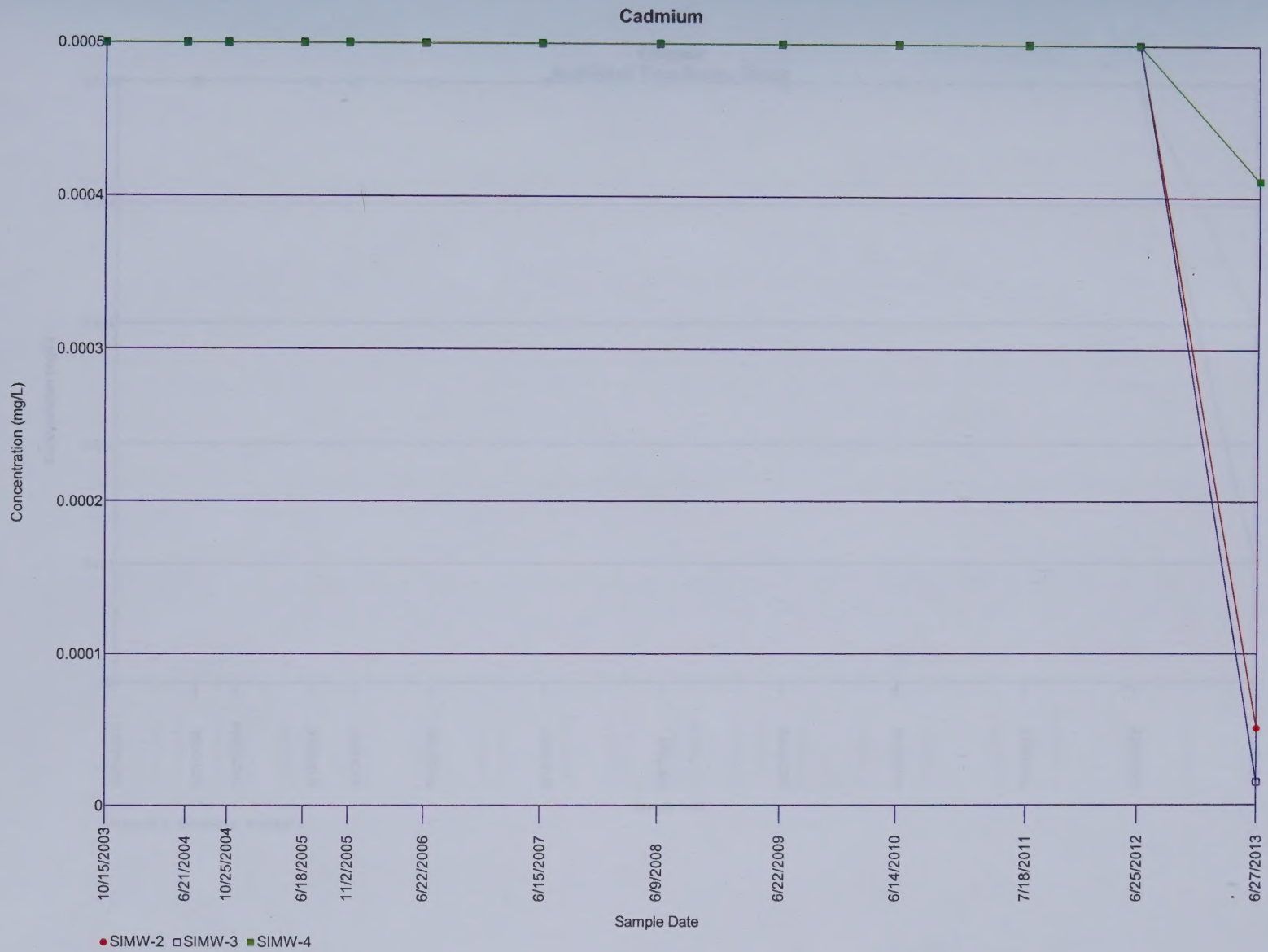


Figure 1: Effect of pH on the activity of the enzyme

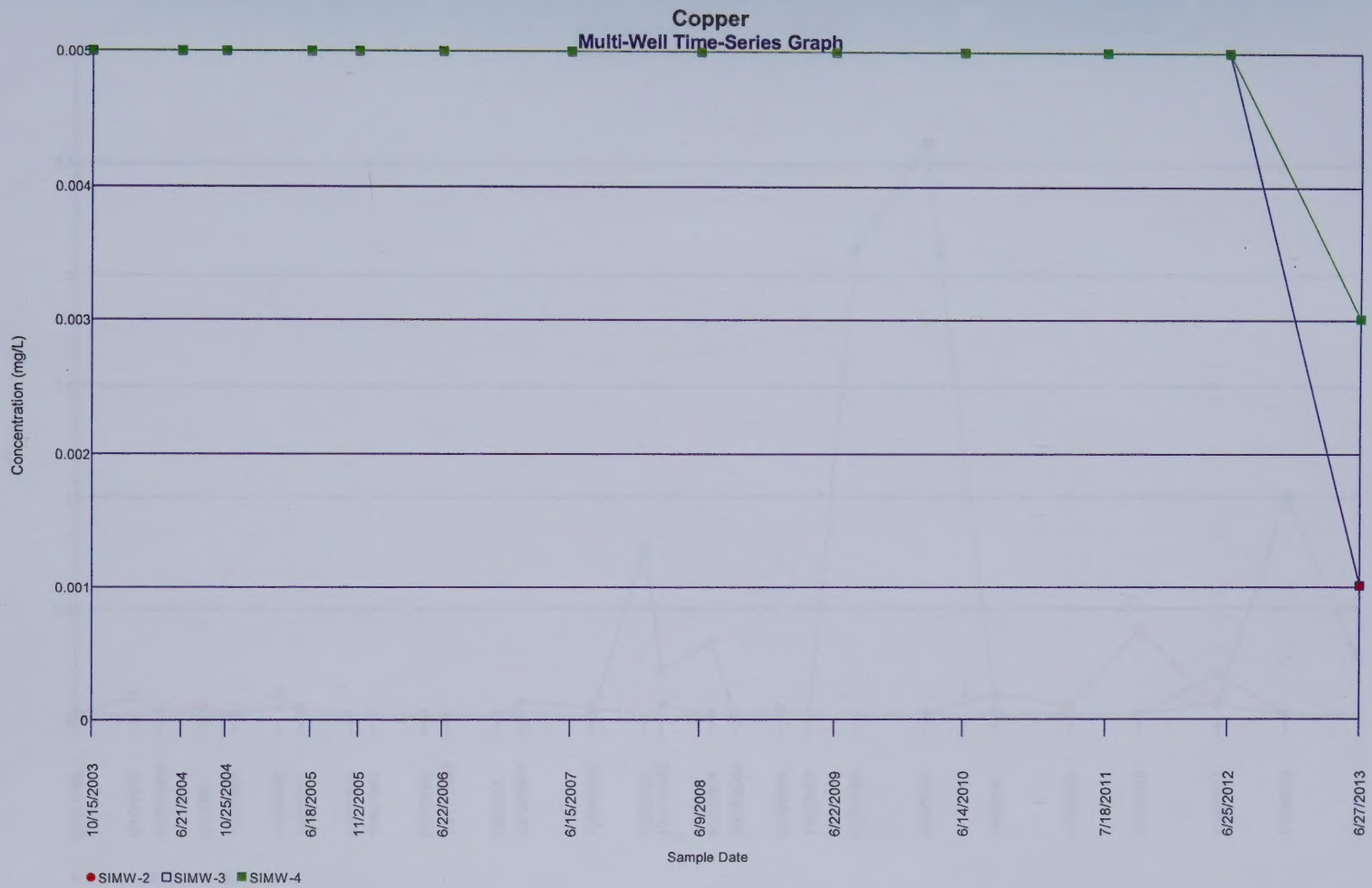




P. 10/15 K. C. 10/15/15

10/15/15





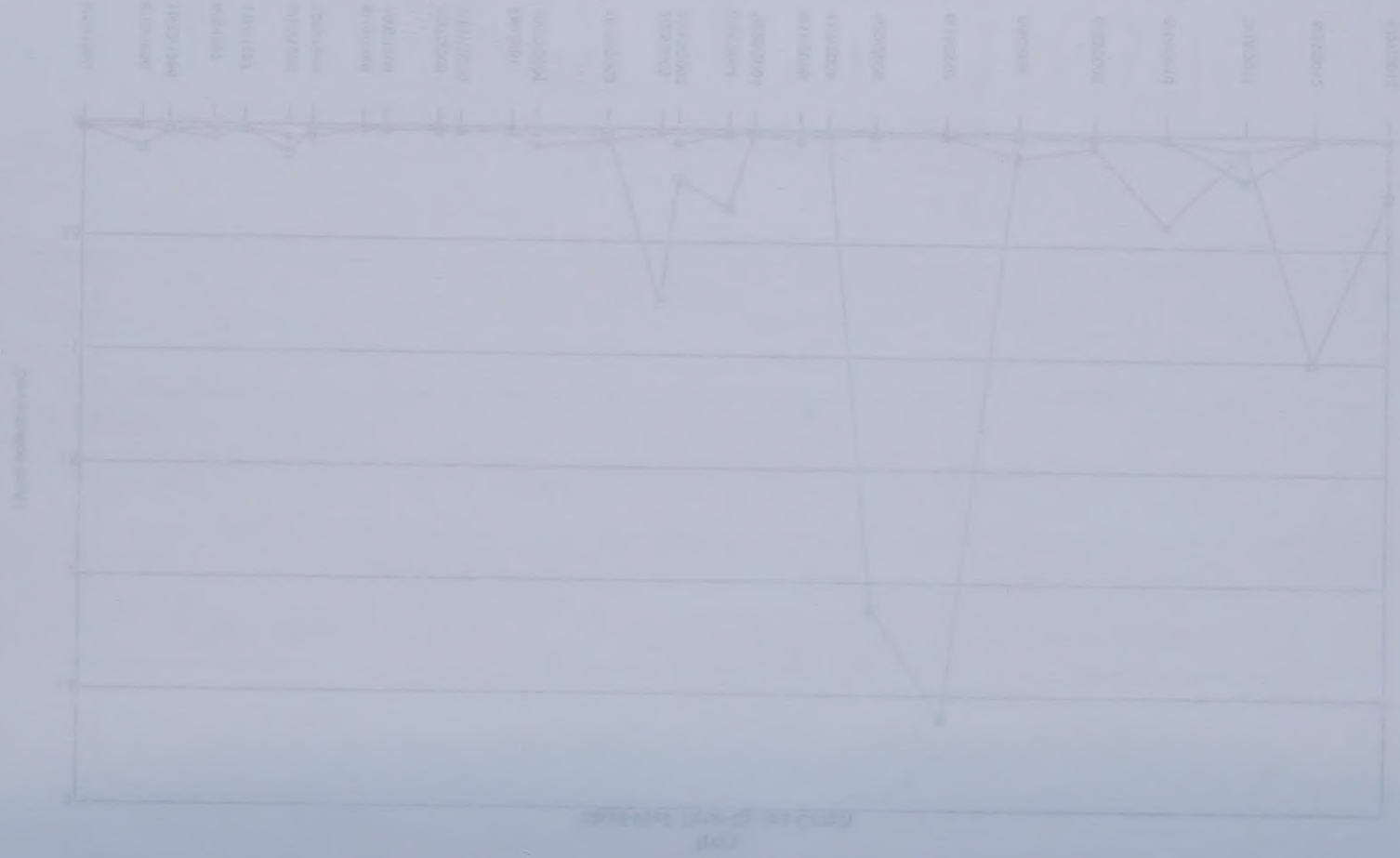


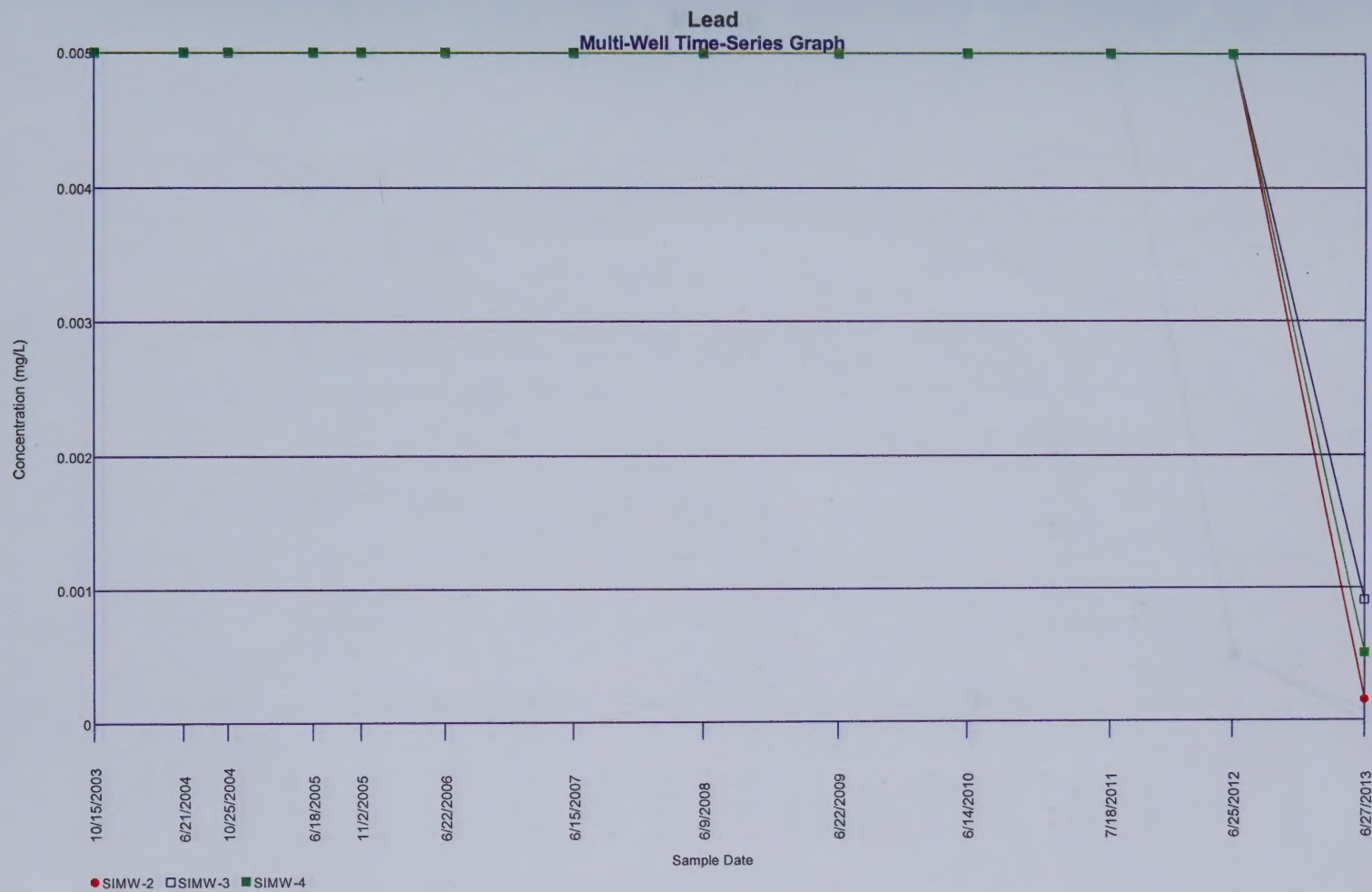
Iron
Multi-Well Time-Series Graph

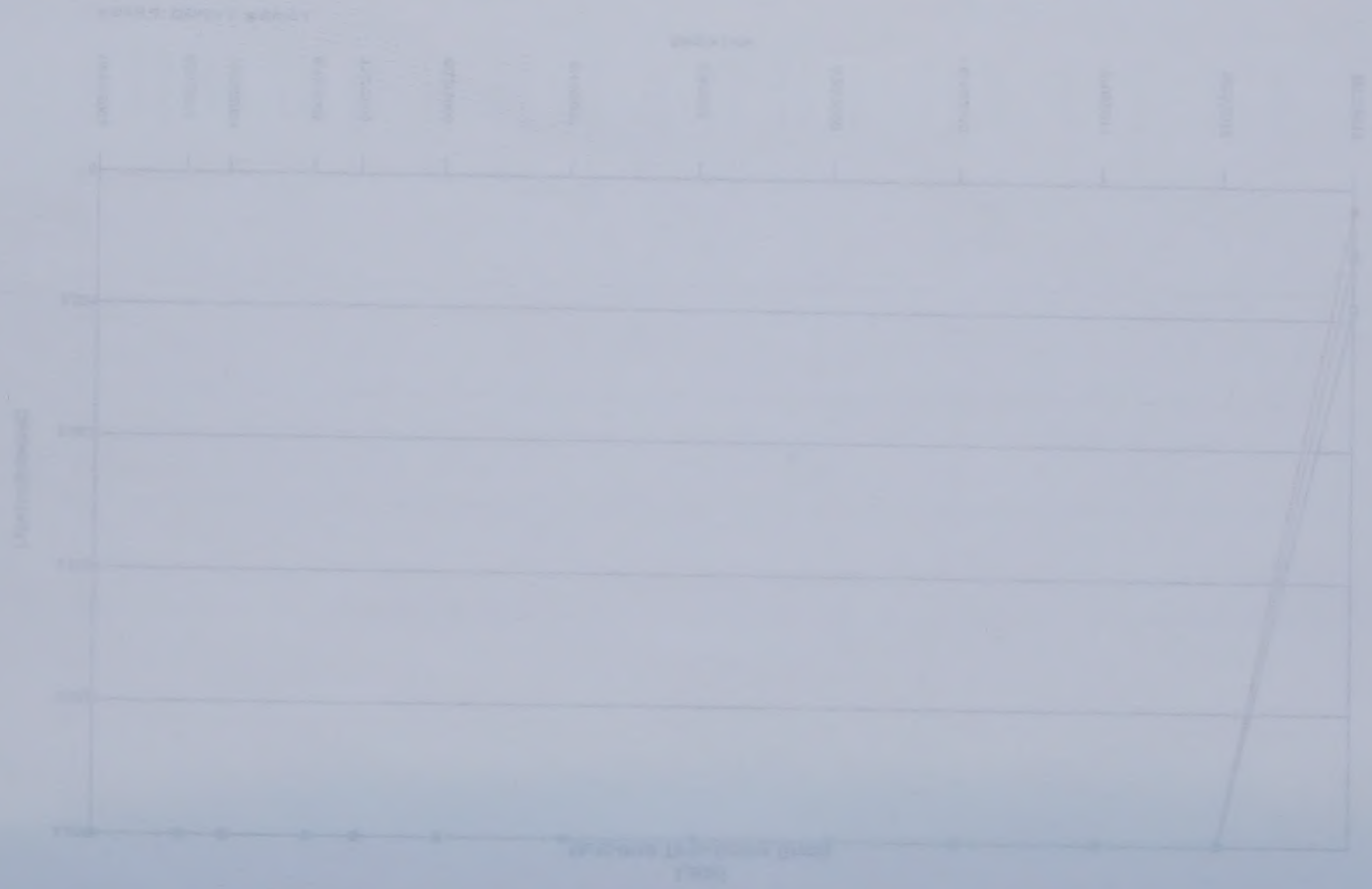


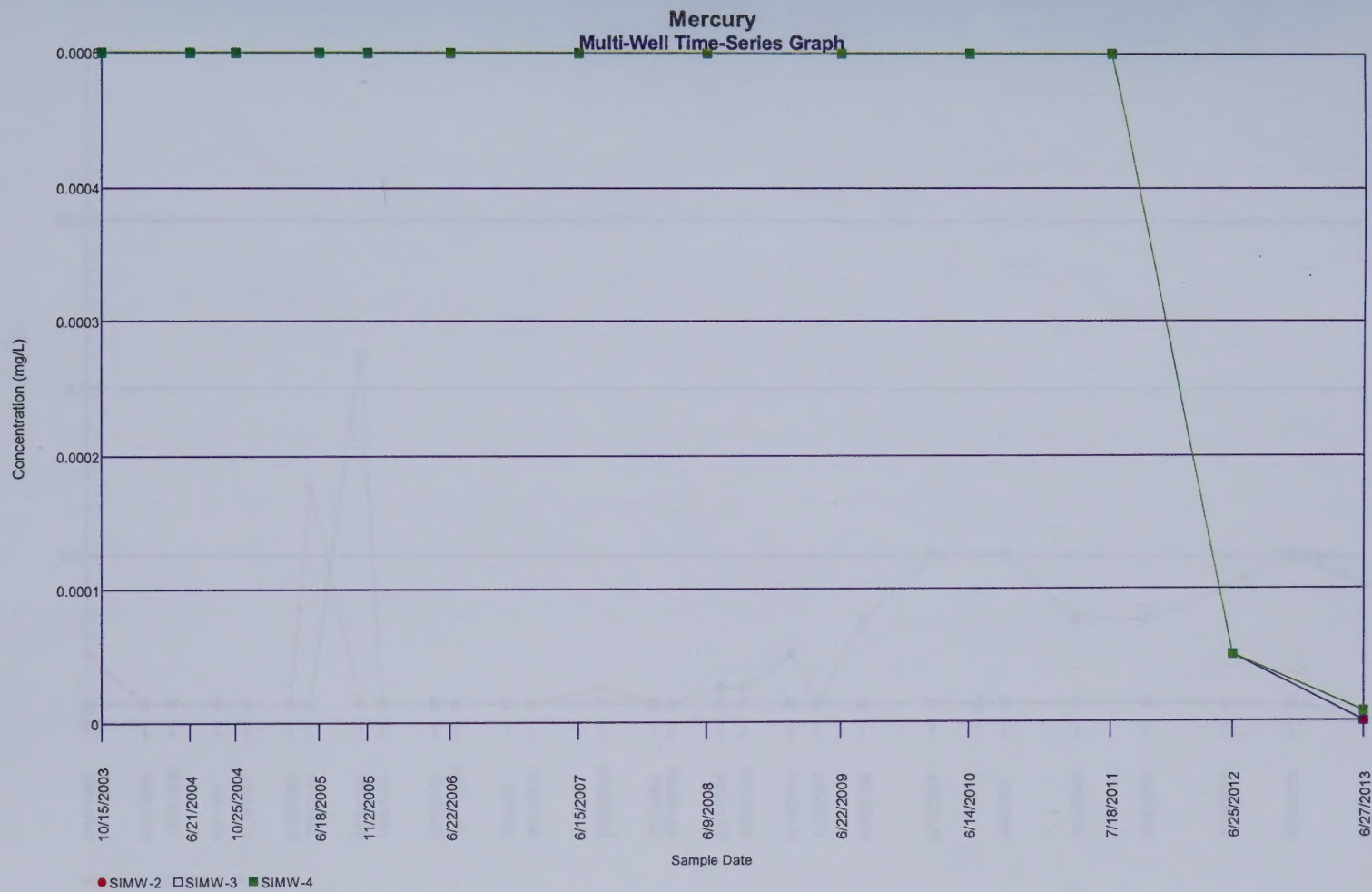
World Energy Review

World Energy Review







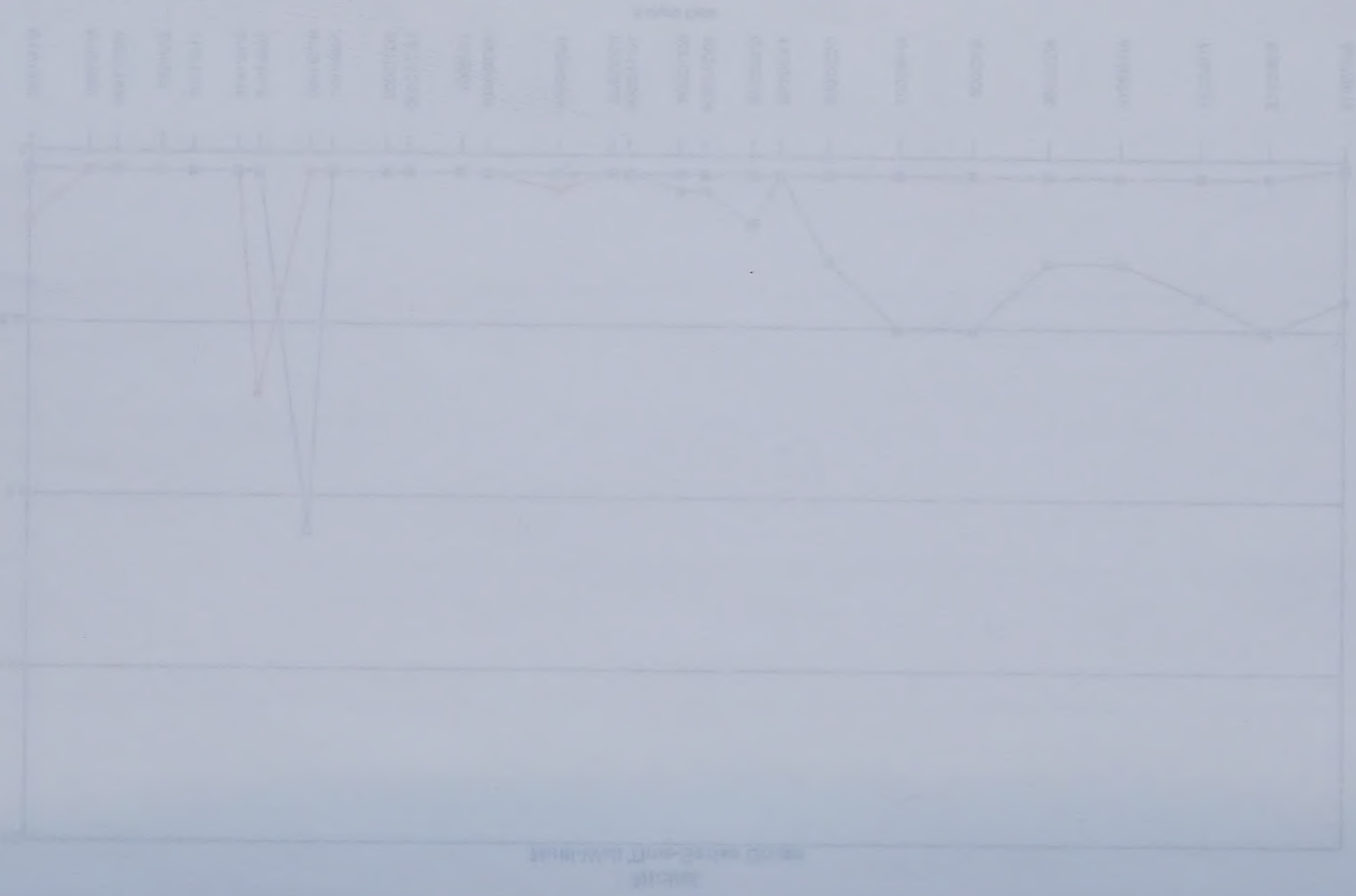


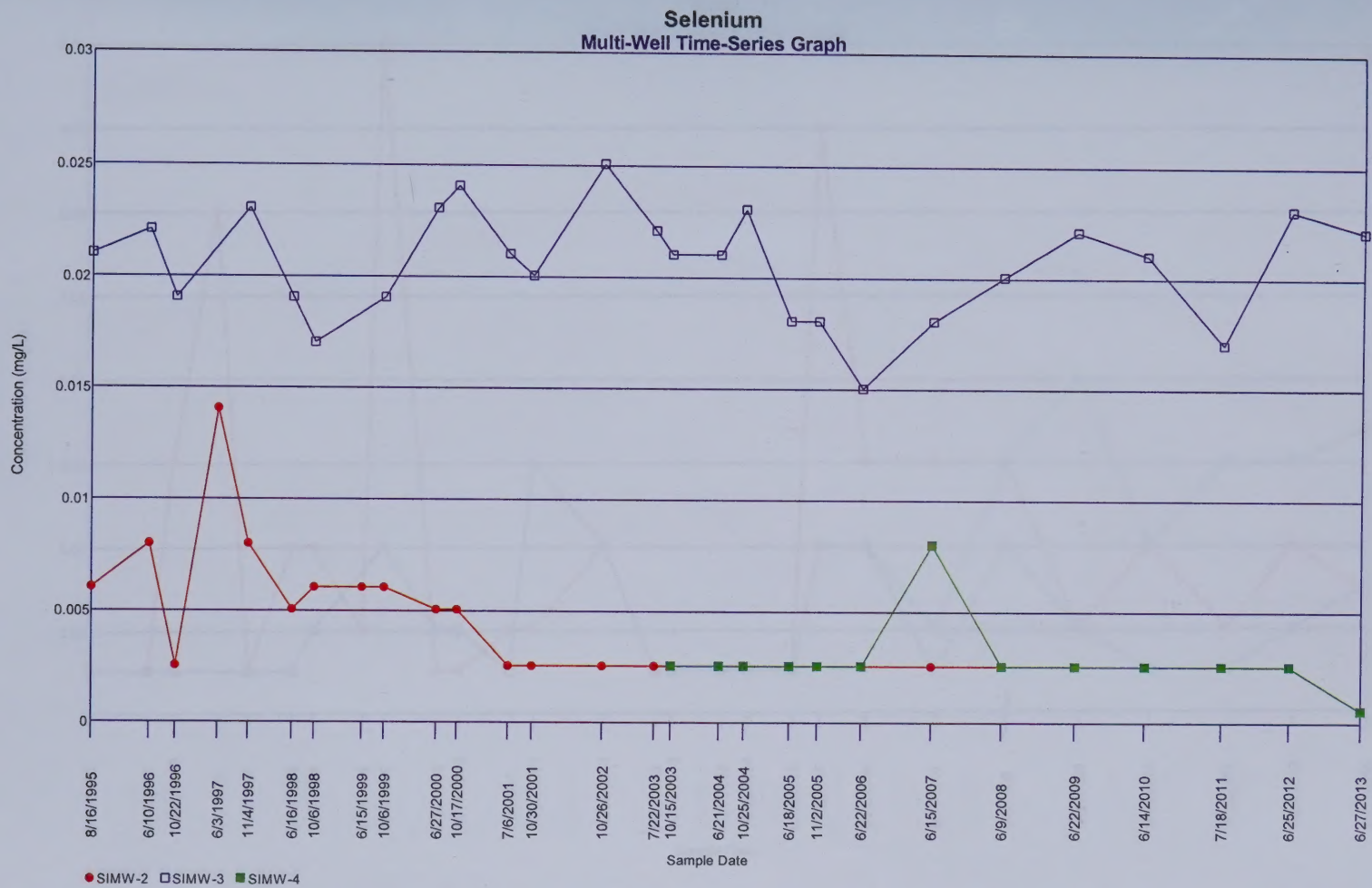


Nickel
Multi-Well Time-Series Graph



Table 1. Summary of results

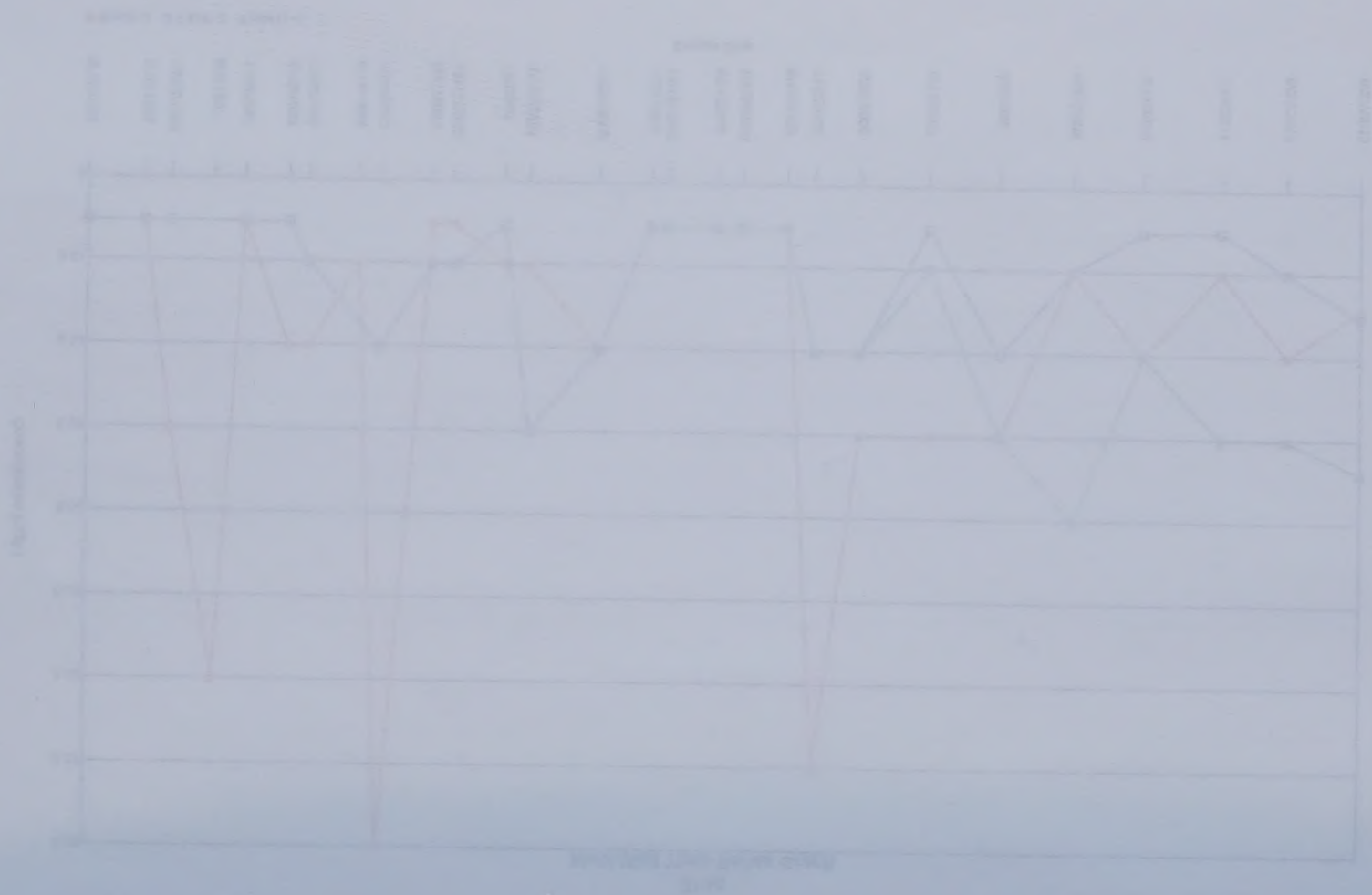






Zinc
Multi-Well Time-Series Graph



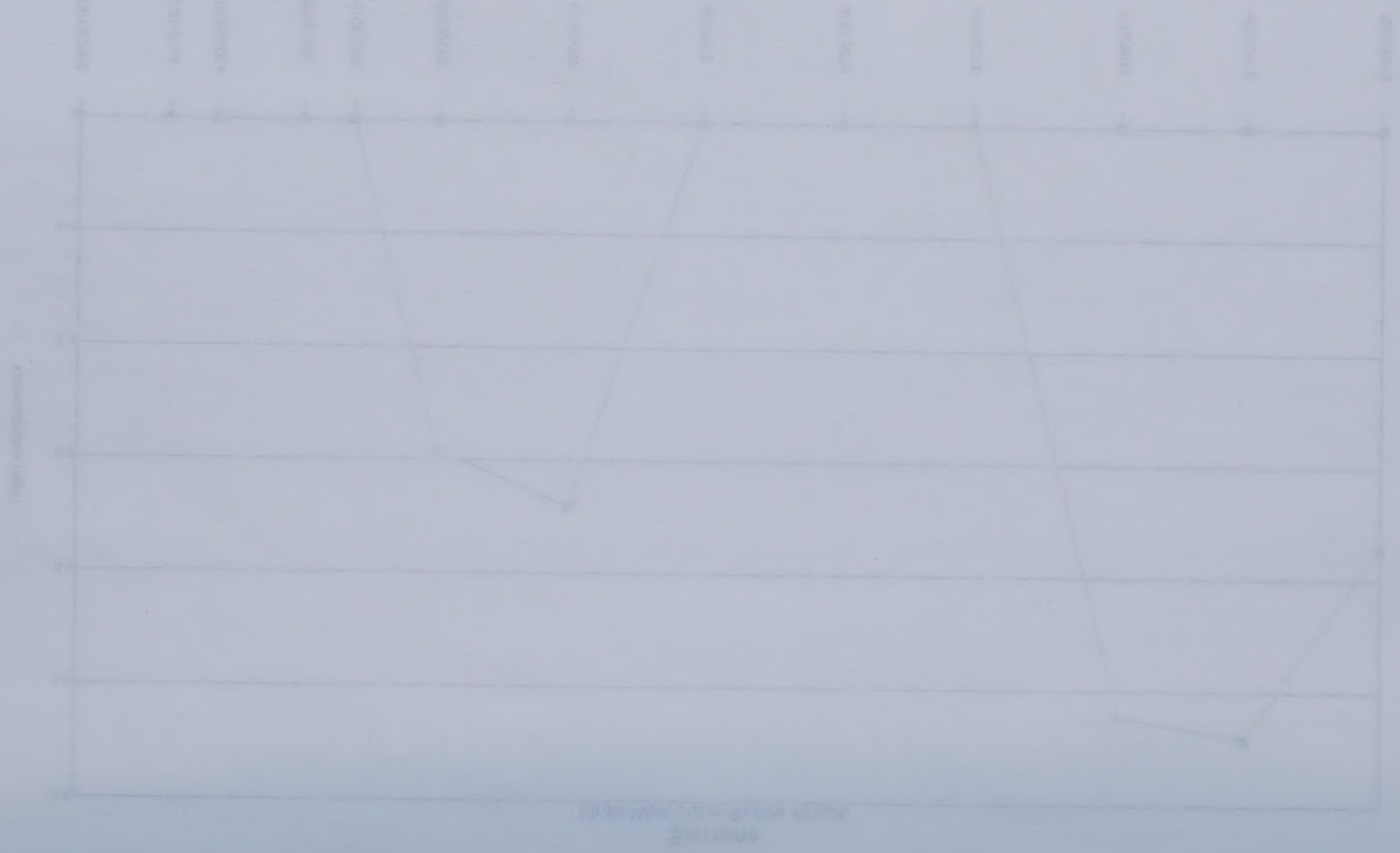


Benzene
Multi-Well Time-Series Graph

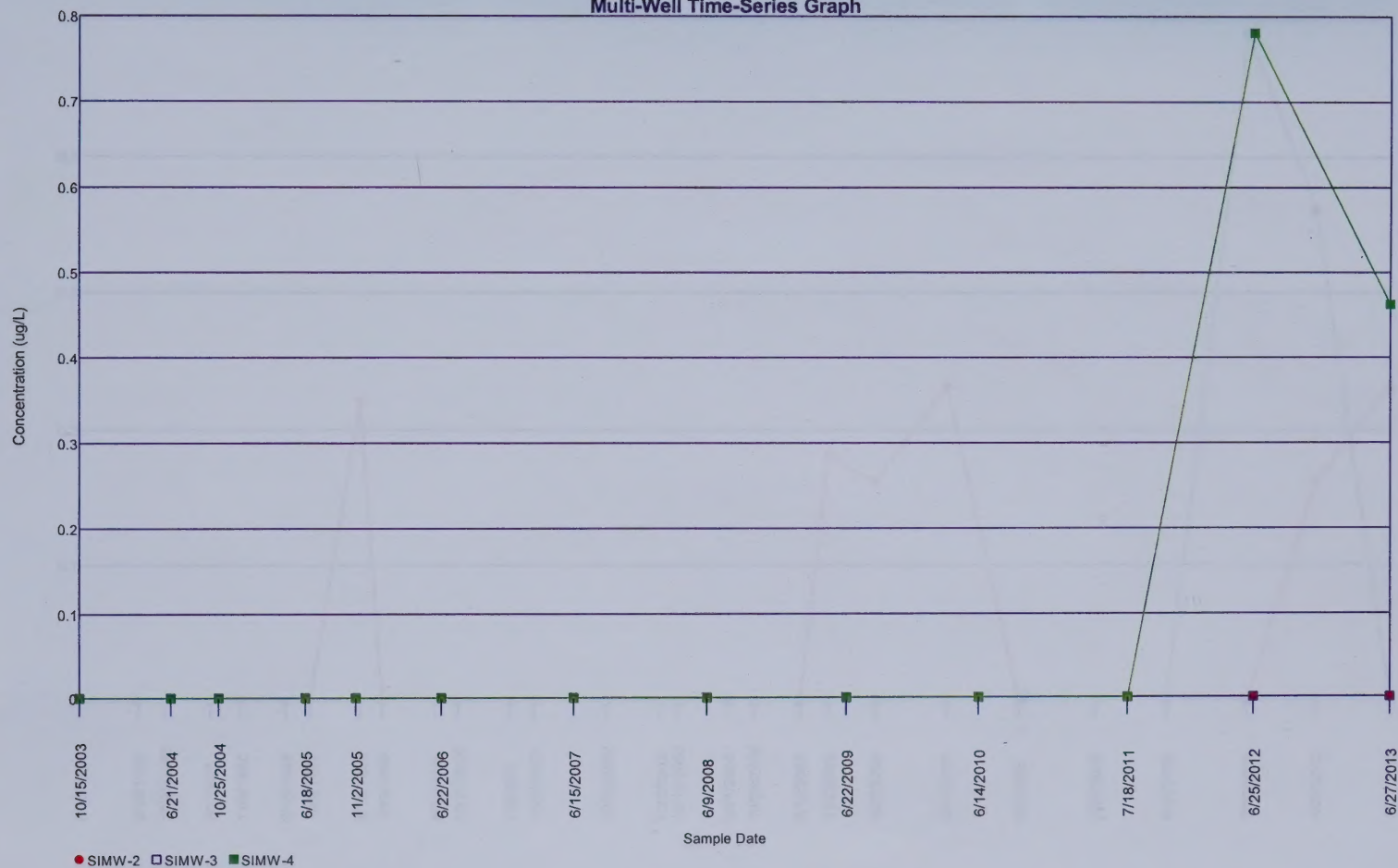


WATER RESOURCES

WATER RESOURCES



Chlorobenzene Multi-Well Time-Series Graph



10/10/10

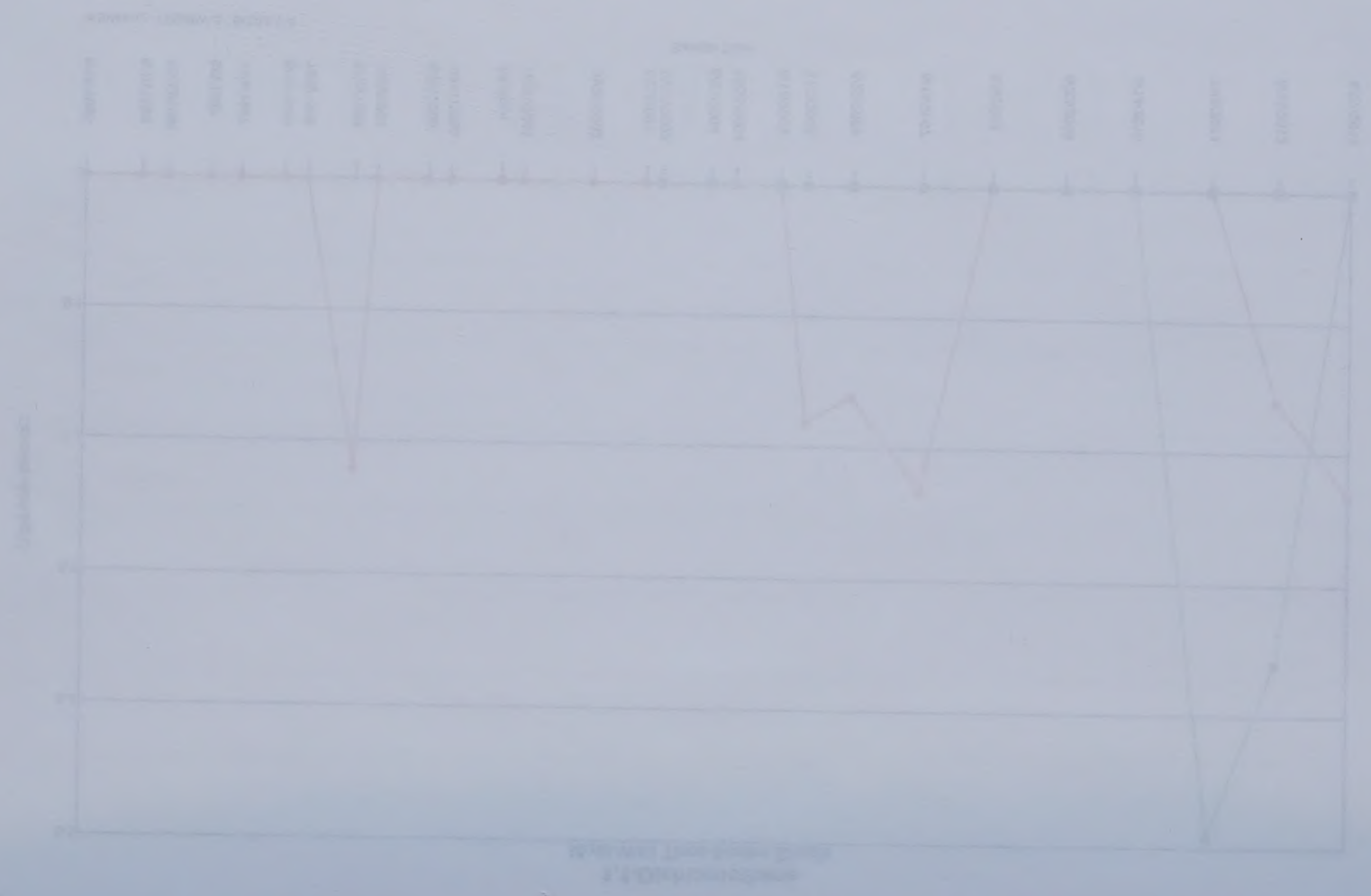
10/10/10



10/10/10

1,1-Dichloroethane
Multi-Well Time-Series Graph





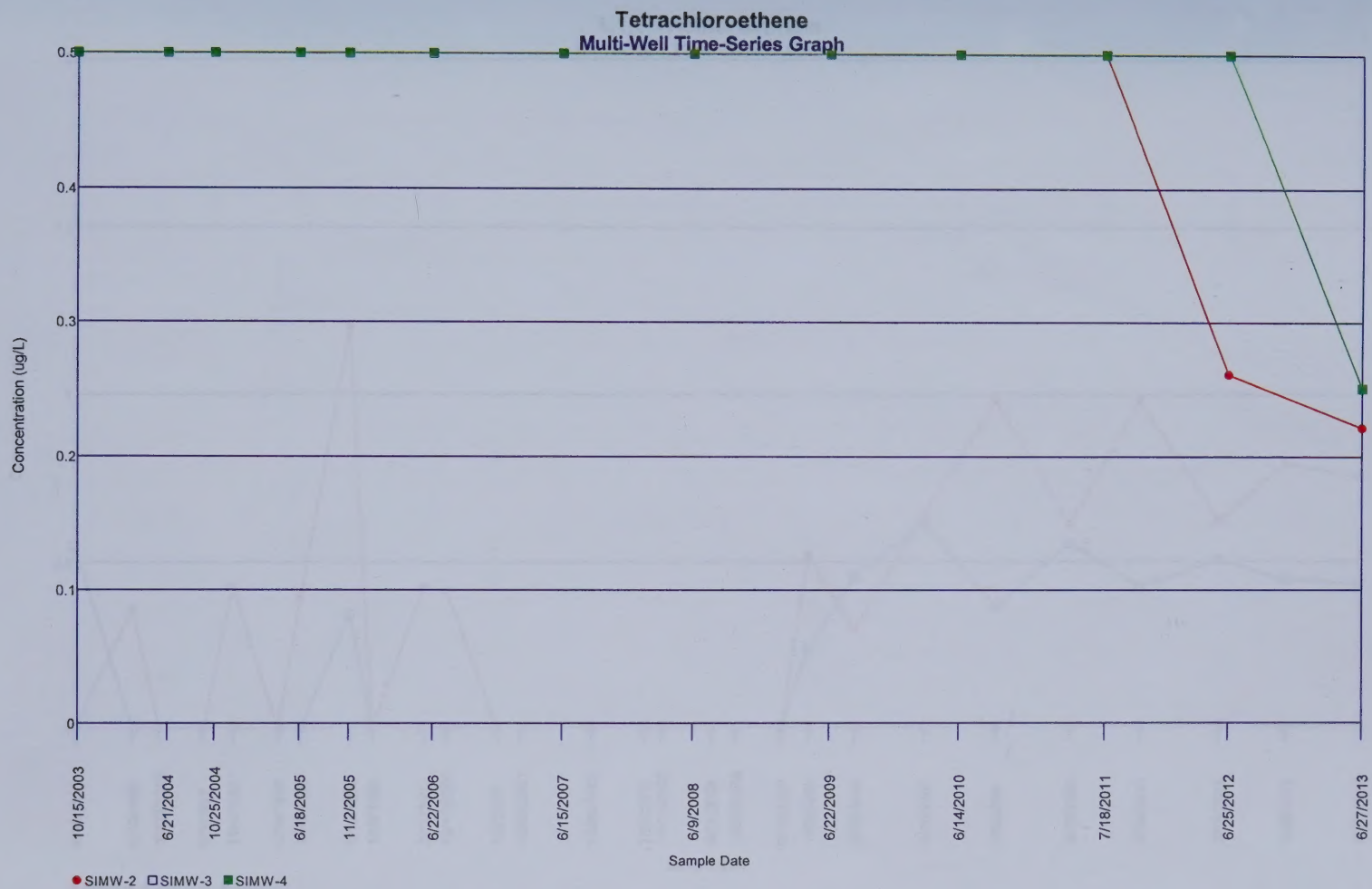
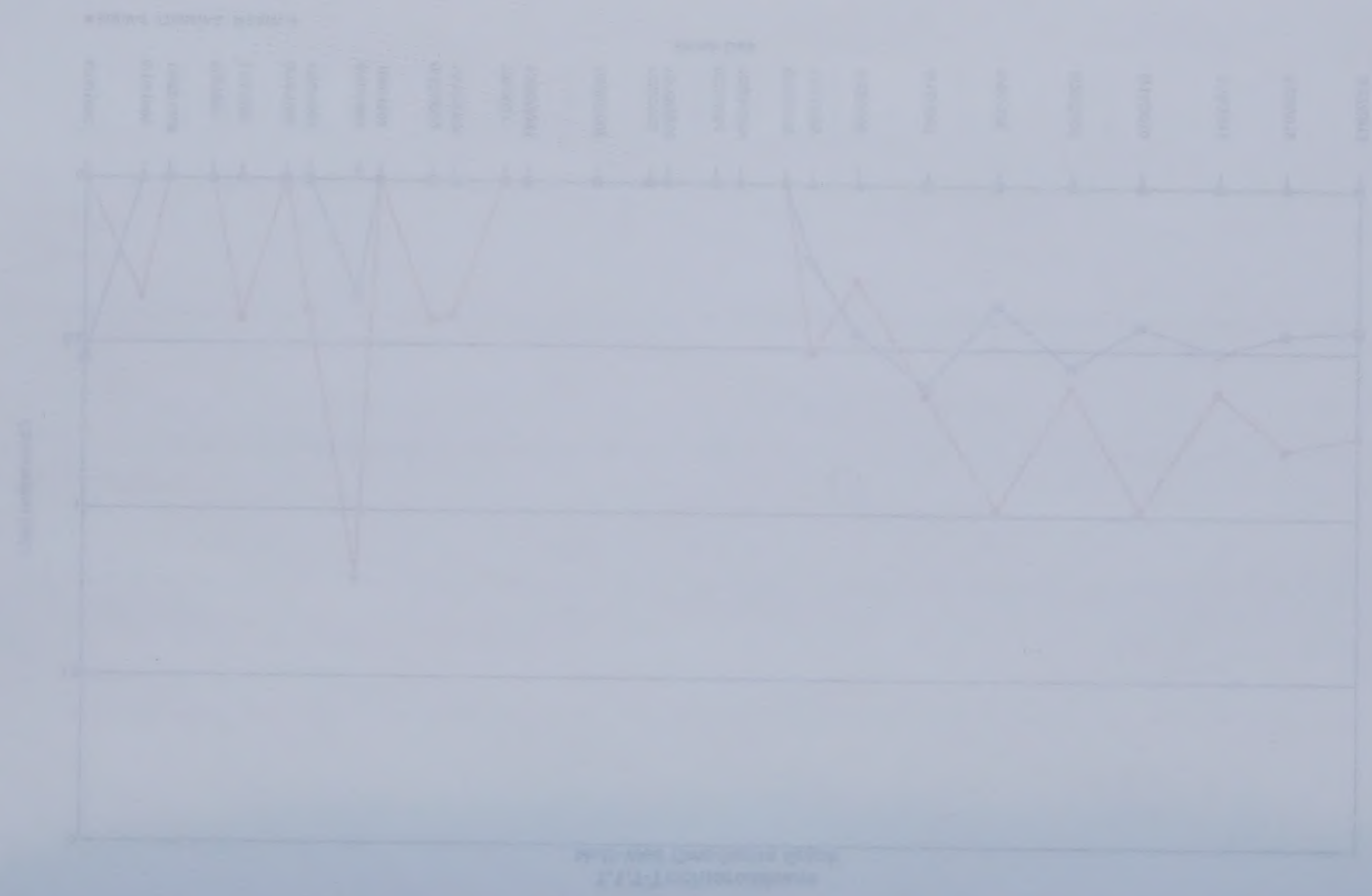


Figure 1: [Illegible Title]



1,1,1-Trichloroethane
Multi-Well Time-Series Graph





Trichlorofluoromethane Multi-Well Time-Series Graph



ATTACHMENT 2

STATISTICAL ANALYSIS REPORTS

Sanitation Inc. Landfill
License #291
June 2013 Groundwater Sampling Report

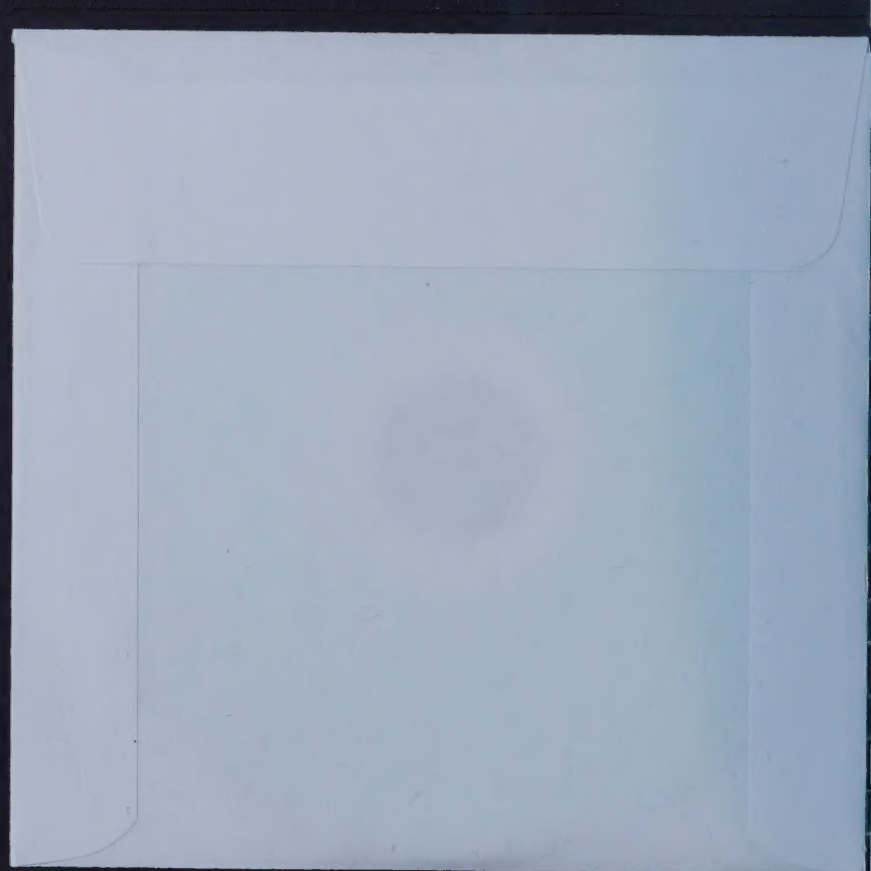
Attachment 2
Statistical Analysis Reports

September 2013



Hydrometrics, Inc.
Consulting Scientists and Engineers

3020 Bozeman
Helena, MT 59601
(406) 443-4150



ATTACHMENT 3

FIELD FORMS AND LABORATORY REPORT

pH-SC-Temp.

Instrument Calibration Form

Meter Type: BYD-D11-TYPE C (033338)

Serial No: 0264559

Project Name: Sep. 1st/100 Inc 4f

Date: 6-27-13

Personnel: B. Danse

Weather: hot

pH CALIBRATION

Time	Temp	Reading	Reading
1430	7	27	6.96
	10		

Calibration Check: _____

TEMPERATURE CALIBRATION

Time	Temp	Temperature	Reading	Cell Factor
141930	1413	26.7	1411	ok

Notes:

GROUNDWATER MONITORING VOLUMES

Project Location <u>Sanitation Inc LF</u>		Date Sampled <u>6-27-13</u>			
Well No.	Total Depth (Ft)	Depth to Water (Ft)	Difference (Ft)	1 Well Volume (DIFF X .16)	3 Well Volume (X3)
<u>2</u>					
Typical	<u>40</u>	<u>33</u>	<u>7</u>	<u>1.12</u>	<u>3.36</u>
This Period		<u>33</u>	<u>Same</u>		
<u>3</u>					
Typical	<u>37.5</u>	<u>29</u>	<u>8.5</u>	<u>1.36</u>	<u>4.1</u>
This Period		<u>28.6</u>	<u>Same</u>		
<u>4</u>					
Typical	<u>49.5</u>	<u>27</u>	<u>22.5</u>	<u>3.6</u>	<u>10</u>
This Period		26.9	<u>Same</u>	<u> </u>	<u> </u>
Typical					
This Period					
Typical					
This Period					

~~BARRY DARRSHAW CONSULTING LLC~~
~~Barry Darrshaw~~

~~Ground Water Monitoring Field Report~~

Project: Sanitation Inc well: SIMW-2
Personnel: Barry Darrshaw
Date: June 27, 2013 time: 1500
Conditions: Clear-hat
Static Water Level: 32.11 Total Depth Purgin: _____
Purge Method: hand bail Volume Purged: _____

Volume	Temperature	Conductivity	pH
1 1/2 gal	13.3	1511	7.53
2 gal (day)	10.8	1564	7.43
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____

Pumping Level: _____ (Discharge Pump)

Recovery (Interval or later):

at 0 at 0.10 at 1 SECS. at 40.0

Comments:

~~BARRY DARRSHEN CONSULTING LLC~~
~~Release Monitoring~~

~~Ground Water Monitoring Field Report~~

Project Sanitation Line 51MW-3
51MW-3D
Personnel: B. Damschew
Date: June 27, 2013 Time: 1530
Conditions: calm - hot - clear
Static Water Level: 28.61 Total Depth Purgon: _____
Purge Method: hand bafe Volume Purged: _____

	Volume	Temperature	Conductivity	pH
1.	<u>2 1/4 gal</u>	<u>12.3</u>	<u>1247</u>	<u>7.72</u>
2.	<u>2 1/2 gal (dry)</u>	<u>10.6</u>	<u>1319</u>	<u>7.60</u>
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____

Pumping Level: _____ (Pneumatic Pump)

Recovery (Inertial or Isobar):

h1 0 h2 0.10 ~~time~~ 6 SECS ~~depth~~ 37.10

Comments:

SIP1 = 33.28

BARRY DAMSUKEN CONSULTING INC. *Refers. Monitoring*

Ground Water Monitoring Field Report

Project: Sanitation Inc. well: simus.4
 Personnel: B. Damsuken
 Date: June 27, 13 Time: 1600
 Conditions: Calm- hot
 Static Water Level: 26.90 Total Depth Purgon:
 Purge Method: hand bale Volume Purgon:

	Volume	Temperature	Conductivity	pH
1.	9	12.6	1554	7.87
2.	10	10.4	1654	7.71
3.	10 1/2	9.7	2001	7.55
4.	11	9.4	2015	7.49
5.	11 1/4	10.5	2286	7.50
	11 1/2	10.4	2383	7.73

Pumping Level: _____ (Discharge Pump)

Recovery (Interval or better):

at 0 at 0.10 at 4 SECS. at 36.1

Comments:



Chain of Custody and Analytical Request Record

Page ____ of ____

PLEASE PRINT (Provide as much information as possible.)

Company Name: <i>Barry Damrosch Consulting, LLC</i>	Project Name, PWS, Permit, Etc. <i>Sanitation Inc. Closed Land Fill</i>	Sample Origin State: <i>MT</i>	EPA/State Compliance: Yes ☒ No ☐
Report Mail Address (Required): <i>5531 YORK RD. HELENA, MT 59602</i>	Contact Name: <i>Barry Damrosch</i>	Phone/Fax: <i>406-461-5003</i>	Cell: <i>B. Damrosch</i>
Invoice Address (Required): <i>SAME AS ABOVE</i>	Invoice, Contact & Phone: <i>SAME AS ABOVE</i>	Purchase Order:	Quote/Bottle Order:

☐ No Hard Copy Email:		
Special Report/Formats: <i>DEQ Solid Waste</i>		
☐ DW	☐ EDD/EDT (Electronic Data)	Format:
☐ POTW/WWTP	☐ LEVEL IV	
☒ State: <i>MT</i>	☐ NELAC	
☐ Other:		
SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)		
Collection Date	Collection Time	MATRIX
1 <i>SMW-2</i>	<i>6-27-13 1500</i>	<i>Tw</i> X
2 <i>SMW-3</i>	<i>1530</i>	<i>Tw</i> X
3 <i>SMW-3D</i>	<i>1530</i>	<i>Tw</i> X
4 <i>SMW-4</i>	<i>1600</i>	<i>Tw</i> X
5 <i>TRIP Blank</i>	<i>-</i>	<i>Tw</i> X
6		
7		
8		
9		
10		

Number of Containers Sample Type: <i>AW'S VBO DW</i> Air Water Solids/Solids Vegetation Bioassay Other DW - Drinking Water	ANALYSIS REQUESTED										SEE ATTACHED Standard Turnaround (TAT)	R U S H	Contact ELI prior to RUSH sample submittal for charges and scheduling - See Instruction Page	Shipped by: <i>Hand</i> Cooler ID(s): <i>V</i>
	Comments: <i>29°C</i>													
On Ice: <i>(Y N)</i>														
Custody Seal On Bottle: <i>Y N</i> On Cooler: <i>Y N</i>														
Intact: <i>Y N</i>														
Signature Match: <i>Y N</i>														

Custody Record MUST be Signed	Relinquished by (print): <i>Barry Damrosch</i>	Date/Time: <i>6-28-13 10:55A</i>	Signature: <i>Barry Damrosch</i>	Received by (print):	Date/Time:	Signature:
	Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
	Sample Disposal:	Return to Client:	Lab Disposal:	Received by Laboratory:	Date/Time:	Signature:

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested.

This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.
Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.



ANALYTICAL SUMMARY REPORT

July 22, 2013

Barry Damschen
5531 York Rd
Helena, MT 59602

Workorder No.: H13060493 Quote ID: H815 - Landfill Parameters

Project Name: Sanitation Inc Closed Landfill

Energy Laboratories Inc Helena MT received the following 5 samples for Barry Damschen on 6/28/2013 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H13060493-001	SIMW-2	06/27/13 15:00	06/28/13	Aqueous	Metals by ICP/ICPMS, Dissolved Cyanide, Total Manual Distillation Chemical Oxygen Demand Conductivity Mercury, Dissolved Anions by Ion Chromatography Nitrogen, Nitrate + Nitrite pH Digestion, Mercury by CVAA 8260-Volatile Organic Comp, 40 CFR Part 258 App I
H13060493-002	SIMW-3	06/27/13 15:30	06/28/13	Aqueous	Same As Above
H13060493-003	SIMW-3D	06/27/13 15:30	06/28/13	Aqueous	Same As Above
H13060493-004	SIMW-4	06/27/13 16:00	06/28/13	Aqueous	Same As Above
H13060493-005	TB 6/19/13 EM HCL3291 3351	06/27/13 15:00	06/28/13	Trip Blank	

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

Project Manager - Helena, MT

Digitally signed by
Wanda Johnson

Date: 2013.07.23 11:22:59 -06:00

CLIENT: Barry Damschen
Project: Sanitation Inc Closed Landfill
Sample Delivery Group: H13060493

Report Date: 07/22/13

CASE NARRATIVE

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.

Due to instrument error, the Trip Blank was not analyzed. Abb 7/2/13

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Barry Damschen
Project: Sanitation Inc Closed Landfill
Lab ID: H13060493-001
Client Sample ID: SIMW-2

Report Date: 07/22/13
Collection Date: 06/27/13 15:00
Date Received: 06/28/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.8	s.u.	H	0.1		A4500-H B	06/28/13 12:52 / cmm
Conductivity @ 25 C	1510	umhos/cm		1		A2510 B	06/28/13 12:52 / cmm
INORGANICS							
Cyanide, Total	ND	mg/L		0.003		Kelada-01	07/08/13 10:58 / eli-b
Chloride	34	mg/L		1		E300.0	07/03/13 16:22 / cmm
Sulfate	140	mg/L		1		E300.0	07/03/13 16:22 / cmm
AGGREGATE ORGANICS							
Oxygen Demand, Chemical (COD)	9	mg/L		1		E410.4	07/02/13 15:30 / reh
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	2.40	mg/L	D	0.02		E353.2	07/01/13 15:48 / reh
METALS, DISSOLVED							
Antimony	ND	mg/L		0.0005		SW6020	07/10/13 01:25 / dck
Arsenic	ND	mg/L		0.001		SW6020	07/10/13 01:25 / dck
Barium	0.040	mg/L		0.003		SW6020	07/10/13 01:25 / dck
Beryllium	ND	mg/L		0.0008		SW6020	07/10/13 01:25 / dck
Cadmium	ND	mg/L	D	0.0001		SW6020	07/17/13 02:34 / dck
Chromium	ND	mg/L		0.01		SW6020	07/10/13 01:25 / dck
Cobalt	ND	mg/L		0.01		SW6020	07/10/13 01:25 / dck
Copper	ND	mg/L		0.002		SW6020	07/10/13 01:25 / dck
Iron	ND	mg/L		0.02		SW6020	07/12/13 16:50 / dck
Lead	ND	mg/L		0.0003		SW6020	07/10/13 01:25 / dck
Mercury	ND	mg/L		5.0E-06		E245.1	07/03/13 15:07 / eli-b40
Nickel	0.002	mg/L		0.002		SW6020	07/10/13 01:25 / dck
Selenium	ND	mg/L		0.001		SW6020	07/10/13 01:25 / dck
Silver	ND	mg/L		0.0002		SW6020	07/10/13 01:25 / dck
Thallium	ND	mg/L		0.0002		SW6020	07/10/13 01:25 / dck
Vanadium	ND	mg/L		0.1		SW6020	07/10/13 01:25 / dck
Zinc	0.014	mg/L		0.008		SW6020	07/10/13 01:25 / dck
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		10		SW8260B	07/02/13 18:30 / abb
Acrylonitrile	ND	ug/L		3.0		SW8260B	07/02/13 18:30 / abb
Benzene	ND	ug/L		0.50		SW8260B	07/02/13 18:30 / abb
Bromochloromethane	ND	ug/L		0.50		SW8260B	07/02/13 18:30 / abb
Bromodichloromethane	ND	ug/L		0.50		SW8260B	07/02/13 18:30 / abb
Bromoform	ND	ug/L		0.50		SW8260B	07/02/13 18:30 / abb
Bromomethane	ND	ug/L		0.50		SW8260B	07/02/13 18:30 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Barry Damschen
Project: Sanitation Inc Closed Landfill
Lab ID: H13060493-001
Client Sample ID SIMW-2

Report Date: 07/22/13
Collection Date: 06/27/13 15:00
Date Received: 06/28/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Carbon disulfide	ND	ug/L		1.0		SW8260B	07/02/13 18:30 / abb
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	07/02/13 18:30 / abb
Chlorobenzene	ND	ug/L		0.50		SW8260B	07/02/13 18:30 / abb
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	07/02/13 18:30 / abb
Chloroethane	ND	ug/L		0.50		SW8260B	07/02/13 18:30 / abb
Chloroform	ND	ug/L		0.50		SW8260B	07/02/13 18:30 / abb
Chloromethane	ND	ug/L		0.50		SW8260B	07/02/13 18:30 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	07/02/13 18:30 / abb
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	07/02/13 18:30 / abb
Dibromomethane	ND	ug/L		0.50		SW8260B	07/02/13 18:30 / abb
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	07/02/13 18:30 / abb
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	07/02/13 18:30 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	07/02/13 18:30 / abb
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	07/02/13 18:30 / abb
1,1-Dichloroethane	0.23	ug/L	J	0.50		SW8260B	07/02/13 18:30 / abb
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	07/02/13 18:30 / abb
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	07/02/13 18:30 / abb
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	07/02/13 18:30 / abb
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	07/02/13 18:30 / abb
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	07/02/13 18:30 / abb
cis-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	07/02/13 18:30 / abb
trans-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	07/02/13 18:30 / abb
Ethylbenzene	ND	ug/L		0.50		SW8260B	07/02/13 18:30 / abb
2-Hexanone	ND	ug/L		10		SW8260B	07/02/13 18:30 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	07/02/13 18:30 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	07/02/13 18:30 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	07/02/13 18:30 / abb
Methylene chloride	ND	ug/L		0.50		SW8260B	07/02/13 18:30 / abb
Styrene	ND	ug/L		0.50		SW8260B	07/02/13 18:30 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	07/02/13 18:30 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	07/02/13 18:30 / abb
Tetrachloroethene	0.22	ug/L	J	0.50		SW8260B	07/02/13 18:30 / abb
Toluene	ND	ug/L		0.50		SW8260B	07/02/13 18:30 / abb
1,1,1-Trichloroethane	0.75	ug/L		0.50		SW8260B	07/02/13 18:30 / abb
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	07/02/13 18:30 / abb
Trichloroethene	ND	ug/L		0.50		SW8260B	07/02/13 18:30 / abb
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	07/02/13 18:30 / abb
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	07/02/13 18:30 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	07/02/13 18:30 / abb
Vinyl chloride	ND	ug/L		0.40		SW8260B	07/02/13 18:30 / abb
m-p-Xylenes	ND	ug/L		1.0		SW8260B	07/02/13 18:30 / abb
o-Xylene	ND	ug/L		0.50		SW8260B	07/02/13 18:30 / abb
Xylenes, Total	ND	ug/L		0.50		SW8260B	07/02/13 18:30 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Barry Damschen
Project: Sanitation Inc Closed Landfill
Lab ID: H13060493-001
Client Sample ID: SIMW-2

Report Date: 07/22/13
Collection Date: 06/27/13 15:00
Date Received: 06/28/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: 1,2-Dichloroethane-d4	115	%REC		69-131		SW8260B	07/02/13 18:30 / abb
Surr: Dibromofluoromethane	117	%REC		70-125		SW8260B	07/02/13 18:30 / abb
Surr: p-Bromofluorobenzene	102	%REC		76-123		SW8260B	07/02/13 18:30 / abb
Surr: Toluene-d8	99.0	%REC		80-119		SW8260B	07/02/13 18:30 / abb

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Barry Damschen
Project: Sanitation Inc Closed Landfill
Lab ID: H13060493-002
Client Sample ID SIMW-3

Report Date: 07/22/13
Collection Date: 06/27/13 15:30
Date Received: 06/28/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.1	s.u.	H	0.1		A4500-H B	06/28/13 12:55 / cmm
Conductivity @ 25 C	1240	umhos/cm		1		A2510 B	06/28/13 12:55 / cmm
INORGANICS							
Cyanide, Total	ND	mg/L		0.003		Kelada-01	07/08/13 11:00 / eli-b
Chloride	39	mg/L		1		E300.0	07/03/13 16:35 / cmm
Sulfate	210	mg/L		1		E300.0	07/03/13 16:35 / cmm
AGGREGATE ORGANICS							
Oxygen Demand, Chemical (COD)	7	mg/L		1		E410.4	07/02/13 15:30 / reh
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	9.3	mg/L	D	0.1		E353.2	07/01/13 16:01 / reh
METALS, DISSOLVED							
Antimony	ND	mg/L		0.0005		SW6020	07/10/13 01:30 / dck
Arsenic	ND	mg/L		0.001		SW6020	07/10/13 01:30 / dck
Barium	0.011	mg/L		0.003		SW6020	07/10/13 01:30 / dck
Beryllium	ND	mg/L		0.0008		SW6020	07/10/13 01:30 / dck
Cadmium	ND	mg/L		0.00003		SW6020	07/17/13 02:38 / dck
Chromium	ND	mg/L		0.01		SW6020	07/10/13 01:30 / dck
Cobalt	ND	mg/L		0.01		SW6020	07/10/13 01:30 / dck
Copper	ND	mg/L		0.002		SW6020	07/10/13 01:30 / dck
Iron	0.25	mg/L		0.02		SW6020	07/12/13 16:55 / dck
Lead	0.0009	mg/L		0.0003		SW6020	07/10/13 01:30 / dck
Mercury	ND	mg/L		5.0E-06		E245.1	07/03/13 15:09 / eli-b40
Nickel	0.002	mg/L		0.002		SW6020	07/10/13 01:30 / dck
Selenium	0.021	mg/L		0.001		SW6020	07/10/13 01:30 / dck
Silver	ND	mg/L		0.0002		SW6020	07/10/13 01:30 / dck
Thallium	ND	mg/L		0.0002		SW6020	07/10/13 01:30 / dck
Vanadium	ND	mg/L		0.1		SW6020	07/10/13 01:30 / dck
Zinc	0.014	mg/L		0.008		SW6020	07/10/13 01:30 / dck
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		10		SW8260B	07/02/13 19:01 / abb
Acrylonitrile	ND	ug/L		3.0		SW8260B	07/02/13 19:01 / abb
Benzene	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb
Bromochloromethane	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb
Bromodichloromethane	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb
Bromoform	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb
Bromomethane	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Barry Damschen
Project: Sanitation Inc Closed Landfill
Lab ID: H13060493-002
Client Sample ID SIMW-3

Report Date: 07/22/13
Collection Date: 06/27/13 15:30
Date Received: 06/28/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Carbon disulfide	ND	ug/L		1.0		SW8260B	07/02/13 19:01 / abb
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb
Chlorobenzene	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb
Chloroethane	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb
Chloroform	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb
Chloromethane	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	07/02/13 19:01 / abb
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb
Dibromomethane	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	07/02/13 19:01 / abb
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb
cis-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	07/02/13 19:01 / abb
trans-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	07/02/13 19:01 / abb
Ethylbenzene	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb
2-Hexanone	ND	ug/L		10		SW8260B	07/02/13 19:01 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	07/02/13 19:01 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	07/02/13 19:01 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	07/02/13 19:01 / abb
Methylene chloride	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb
Styrene	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb
Tetrachloroethene	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb
Toluene	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb
1,1,1-Trichloroethane	0.43	ug/L	J	0.50		SW8260B	07/02/13 19:01 / abb
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb
Trichloroethene	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb
Trichlorofluoromethane	0.76	ug/L		0.50		SW8260B	07/02/13 19:01 / abb
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	07/02/13 19:01 / abb
Vinyl chloride	ND	ug/L		0.40		SW8260B	07/02/13 19:01 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	07/02/13 19:01 / abb
o-Xylene	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb
Xylenes, Total	ND	ug/L		0.50		SW8260B	07/02/13 19:01 / abb

Report RL - Analyte reporting limit.

Definitions: QCL - Quality control limit.

J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Prepared by Helena, MT Branch

Report Date: 07/22/13
Collection Date: 06/27/13 15:30
DateReceived: 06/28/13
Matrix: Aqueous

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Barry Damschen
Project: Sanitation Inc Closed Landfill
Lab ID: H13060493-003
Client Sample ID SIMW-3D

Report Date: 07/22/13
Collection Date: 06/27/13 15:30
Date Received: 06/28/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.0	s.u.	H	0.1		A4500-H B	06/28/13 12:57 / cmm
Conductivity @ 25 C	1240	umhos/cm		1		A2510 B	06/28/13 12:57 / cmm
INORGANICS							
Cyanide, Total	ND	mg/L		0.003		Kelada-01	07/08/13 11:03 / eli-b
Chloride	38	mg/L		1		E300.0	07/03/13 16:47 / cmm
Sulfate	200	mg/L		1		E300.0	07/03/13 16:47 / cmm
AGGREGATE ORGANICS							
Oxygen Demand, Chemical (COD)	8	mg/L		1		E410.4	07/02/13 15:30 / reh
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	9.3	mg/L	D	0.1		E353.2	07/01/13 16:02 / reh
METALS, DISSOLVED							
Antimony	ND	mg/L		0.0005		SW6020	07/10/13 01:35 / dck
Arsenic	ND	mg/L		0.001		SW6020	07/10/13 01:35 / dck
Barium	0.011	mg/L		0.003		SW6020	07/10/13 01:35 / dck
Beryllium	ND	mg/L		0.0008		SW6020	07/10/13 01:35 / dck
Cadmium	ND	mg/L		0.00003		SW6020	07/17/13 02:43 / dck
Chromium	ND	mg/L		0.01		SW6020	07/10/13 01:35 / dck
Cobalt	ND	mg/L		0.01		SW6020	07/10/13 01:35 / dck
Copper	ND	mg/L		0.002		SW6020	07/10/13 01:35 / dck
Iron	0.26	mg/L		0.02		SW6020	07/12/13 17:00 / dck
Lead	0.0004	mg/L		0.0003		SW6020	07/10/13 01:35 / dck
Mercury	ND	mg/L		5.0E-06		E245.1	07/03/13 15:13 / eli-b40
Nickel	ND	mg/L		0.002		SW6020	07/10/13 01:35 / dck
Selenium	0.022	mg/L		0.001		SW6020	07/10/13 01:35 / dck
Silver	ND	mg/L		0.0002		SW6020	07/10/13 01:35 / dck
Thallium	ND	mg/L		0.0002		SW6020	07/10/13 01:35 / dck
Vanadium	ND	mg/L		0.1		SW6020	07/10/13 01:35 / dck
Zinc	0.015	mg/L		0.008		SW6020	07/10/13 01:35 / dck
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		10		SW8260B	07/02/13 17:58 / abb
Acrylonitrile	ND	ug/L		3.0		SW8260B	07/02/13 17:58 / abb
Benzene	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb
Bromochloromethane	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb
Bromodichloromethane	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb
Bromoform	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb
Bromomethane	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Barry Damschen
Project: Sanitation Inc Closed Landfill
Lab ID: H13060493-003
Client Sample ID SIMW-3D

Report Date: 07/22/13
Collection Date: 06/27/13 15:30
Date Received: 06/28/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Carbon disulfide	ND	ug/L		1.0		SW8260B	07/02/13 17:58 / abb
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb
Chlorobenzene	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb
Chloroethane	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb
Chloroform	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb
Chloromethane	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	07/02/13 17:58 / abb
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb
Dibromomethane	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	07/02/13 17:58 / abb
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb
cis-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	07/02/13 17:58 / abb
trans-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	07/02/13 17:58 / abb
Ethylbenzene	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb
2-Hexanone	ND	ug/L		10		SW8260B	07/02/13 17:58 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	07/02/13 17:58 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	07/02/13 17:58 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	07/02/13 17:58 / abb
Methylene chloride	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb
Styrene	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb
Tetrachloroethene	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb
Toluene	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb
1,1,1-Trichloroethane	0.39	ug/L	J	0.50		SW8260B	07/02/13 17:58 / abb
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb
Trichloroethene	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb
Trichlorofluoromethane	0.76	ug/L		0.50		SW8260B	07/02/13 17:58 / abb
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	07/02/13 17:58 / abb
Vinyl chloride	ND	ug/L		0.40		SW8260B	07/02/13 17:58 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	07/02/13 17:58 / abb
o-Xylene	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb
Xylenes, Total	ND	ug/L		0.50		SW8260B	07/02/13 17:58 / abb

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Barry Damschen
Project: Sanitation Inc Closed Landfill
Lab ID: H13060493-003
Client Sample ID SIMW-3D

Report Date: 07/22/13
Collection Date: 06/27/13 15:30
DateReceived: 06/28/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: 1,2-Dichloroethane-d4	115	%REC		69-131		SW8260B	07/02/13 17:58 / abb
Surr: Dibromofluoromethane	115	%REC		70-125		SW8260B	07/02/13 17:58 / abb
Surr: p-Bromofluorobenzene	100	%REC		76-123		SW8260B	07/02/13 17:58 / abb
Surr: Toluene-d8	100	%REC		80-119		SW8260B	07/02/13 17:58 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Barry Damschen
Project: Sanitation Inc Closed Landfill
Lab ID: H13060493-004
Client Sample ID SIMW-4

Report Date: 07/22/13
Collection Date: 06/27/13 16:00
Date Received: 06/28/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.8	s.u.	H	0.1		A4500-H B	06/28/13 13:00 / cmm
Conductivity @ 25 C	2300	umhos/cm		1		A2510 B	06/28/13 13:00 / cmm
INORGANICS							
Cyanide, Total	ND	mg/L		0.003		Kelada-01	07/08/13 11:06 / eli-b
Chloride	200	mg/L		1		E300.0	07/03/13 17:00 / cmm
Sulfate	140	mg/L		1		E300.0	07/03/13 17:00 / cmm
AGGREGATE ORGANICS							
Oxygen Demand, Chemical (COD)	71	mg/L		1		E410.4	07/02/13 15:30 / reh
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	2.14	mg/L	D	0.02		E353.2	07/01/13 16:04 / reh
METALS, DISSOLVED							
Antimony	ND	mg/L		0.0005		SW6020	07/10/13 01:39 / dck
Arsenic	ND	mg/L		0.001		SW6020	07/10/13 01:39 / dck
Barium	0.043	mg/L		0.003		SW6020	07/10/13 01:39 / dck
Beryllium	ND	mg/L		0.0008		SW6020	07/10/13 01:39 / dck
Cadmium	0.00041	mg/L		0.00003		SW6020	07/17/13 02:47 / dck
Chromium	ND	mg/L		0.01		SW6020	07/10/13 01:39 / dck
Cobalt	ND	mg/L		0.01		SW6020	07/10/13 01:39 / dck
Copper	0.003	mg/L		0.002		SW6020	07/10/13 01:39 / dck
Iron	ND	mg/L		0.02		SW6020	07/12/13 17:04 / dck
Lead	0.0005	mg/L		0.0003		SW6020	07/10/13 01:39 / dck
Mercury	6.7E-06	mg/L		5.0E-06		E245.1	07/05/13 14:02 / eli-b40
Nickel	0.041	mg/L		0.002		SW6020	07/10/13 01:39 / dck
Selenium	ND	mg/L		0.001		SW6020	07/10/13 01:39 / dck
Silver	ND	mg/L		0.0002		SW6020	07/10/13 01:39 / dck
Thallium	ND	mg/L		0.0002		SW6020	07/10/13 01:39 / dck
Vanadium	ND	mg/L		0.1		SW6020	07/10/13 01:39 / dck
Zinc	0.034	mg/L		0.008		SW6020	07/10/13 01:39 / dck
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		10		SW8260B	07/02/13 19:32 / abb
Acrylonitrile	ND	ug/L		3.0		SW8260B	07/02/13 19:32 / abb
Benzene	0.37	ug/L	J	0.50		SW8260B	07/02/13 19:32 / abb
Bromochloromethane	ND	ug/L		0.50		SW8260B	07/02/13 19:32 / abb
Bromodichloromethane	ND	ug/L		0.50		SW8260B	07/02/13 19:32 / abb
Bromoform	ND	ug/L		0.50		SW8260B	07/02/13 19:32 / abb
Bromomethane	ND	ug/L		0.50		SW8260B	07/02/13 19:32 / abb

Report Definitions:
 RL - Analyte reporting limit.
 QCL - Quality control limit.
 D - RL increased due to sample matrix.
 J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.
 ND - Not detected at the reporting limit.
 H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Barry Damschen
Project: Sanitation Inc Closed Landfill
Lab ID: H13060493-004
Client Sample ID: SIMW-4

Report Date: 07/22/13
Collection Date: 06/27/13 16:00
Date Received: 06/28/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Carbon disulfide	ND	ug/L		1.0		SW8260B	07/02/13 19:32 / abb
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	07/02/13 19:32 / abb
Chlorobenzene	0.46	ug/L	J	0.50		SW8260B	07/02/13 19:32 / abb
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	07/02/13 19:32 / abb
Chloroethane	ND	ug/L		0.50		SW8260B	07/02/13 19:32 / abb
Chloroform	ND	ug/L		0.50		SW8260B	07/02/13 19:32 / abb
Chloromethane	ND	ug/L		0.50		SW8260B	07/02/13 19:32 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	07/02/13 19:32 / abb
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	07/02/13 19:32 / abb
Dibromomethane	ND	ug/L		0.50		SW8260B	07/02/13 19:32 / abb
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	07/02/13 19:32 / abb
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	07/02/13 19:32 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	07/02/13 19:32 / abb
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	07/02/13 19:32 / abb
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	07/02/13 19:32 / abb
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	07/02/13 19:32 / abb
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	07/02/13 19:32 / abb
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	07/02/13 19:32 / abb
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	07/02/13 19:32 / abb
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	07/02/13 19:32 / abb
cis-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	07/02/13 19:32 / abb
trans-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	07/02/13 19:32 / abb
Ethylbenzene	ND	ug/L		0.50		SW8260B	07/02/13 19:32 / abb
2-Hexanone	ND	ug/L		10		SW8260B	07/02/13 19:32 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	07/02/13 19:32 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	07/02/13 19:32 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	07/02/13 19:32 / abb
Methylene chloride	ND	ug/L		0.50		SW8260B	07/02/13 19:32 / abb
Styrene	ND	ug/L		0.50		SW8260B	07/02/13 19:32 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	07/02/13 19:32 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	07/02/13 19:32 / abb
Tetrachloroethene	ND	ug/L		0.50		SW8260B	07/02/13 19:32 / abb
Toluene	ND	ug/L		0.50		SW8260B	07/02/13 19:32 / abb
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	07/02/13 19:32 / abb
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	07/02/13 19:32 / abb
Trichloroethene	ND	ug/L		0.50		SW8260B	07/02/13 19:32 / abb
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	07/02/13 19:32 / abb
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	07/02/13 19:32 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	07/02/13 19:32 / abb
Vinyl chloride	ND	ug/L		0.40		SW8260B	07/02/13 19:32 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	07/02/13 19:32 / abb
o-Xylene	ND	ug/L		0.50		SW8260B	07/02/13 19:32 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	07/02/13 19:32 / abb

Report RL - Analyte reporting limit.

Definitions: QCL - Quality control limit.

J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Barry Damschen
Project: Sanitation Inc Closed Landfill
Lab ID: H13060493-004
Client Sample ID SIMW-4

Report Date: 07/22/13
Collection Date: 06/27/13 16:00
DateReceived: 06/28/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: 1,2-Dichloroethane-d4	112	%REC		69-131		SW8260B	07/02/13 19:32 / abb
Surr: Dibromofluoromethane	114	%REC		70-125		SW8260B	07/02/13 19:32 / abb
Surr: p-Bromofluorobenzene	98.0	%REC		76-123		SW8260B	07/02/13 19:32 / abb
Surr: Toluene-d8	98.0	%REC		80-119		SW8260B	07/02/13 19:32 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

Prepared by Helena, MT Branch

Report Date: 07/22/13
Collection Date: 06/27/13 15:00
DateReceived: 06/28/13
Matrix: Trip Blank

Report	RL - Analyte reporting limit.	MCL - Maximum contaminant level.
Definitions:	QCL - Quality control limit.	ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Barry Damschen

Report Date: 07/22/13

Project: Sanitation Inc Closed Landfill

Work Order: H13060493

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2510 B										Analytical Run: PHSC_101-H_130628A
Sample ID: CCV - SC 1413		Continuing Calibration Verification Standard								06/28/13 11:21
Conductivity @ 25 C		1370	umhos/cm	1.0	97	90	110			
Method: A2510 B										Batch: R89377
Sample ID: SC 150		Initial Calibration Verification Standard								Run: PHSC_101-H_130628A 06/28/13 08:25
Conductivity @ 25 C		150	umhos/cm	1.0	99	90	110			
Sample ID: SC 5000		Initial Calibration Verification Standard								Run: PHSC_101-H_130628A 06/28/13 08:28
Conductivity @ 25 C		4900	umhos/cm	1.0	98	90	110			
Sample ID: SC 20000		Initial Calibration Verification Standard								Run: PHSC_101-H_130628A 06/28/13 08:30
Conductivity @ 25 C		20000	umhos/cm	1.0	100	90	110			
Sample ID: SC 2ND 717.5		Laboratory Control Sample								Run: PHSC_101-H_130628A 06/28/13 08:32
Conductivity @ 25 C		700	umhos/cm	1.0	97	90	110			
Sample ID: H13060480-001ADUP		Sample Duplicate								Run: PHSC_101-H_130628A 06/28/13 10:49
Conductivity @ 25 C		4010	umhos/cm	1.0				0.2		10
Sample ID: H13060492-001ADUP		Sample Duplicate								Run: PHSC_101-H_130628A 06/28/13 11:58
Conductivity @ 25 C		650	umhos/cm	1.0				1.1		10

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Barry Damschen

Report Date: 07/22/13

Project: Sanitation Inc Closed Landfill

Work Order: H13060493

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A4500-H B								Analytical Run: PHSC_101-H_130628A		
Sample ID: pH 7		Initial Calibration Verification Standard								06/28/13 08:23
pH		7.0	s.u.	0.1	100	98	102			
Sample ID: CCV - pH 7		Continuing Calibration Verification Standard								06/28/13 11:19
pH		7.0	s.u.	0.1	100	98	102			
Method: A4500-H B								Batch: R89377		
Sample ID: H13060480-001ADUP		Sample Duplicate				Run: PHSC_101-H_130628A				06/28/13 10:49
pH		7.1	s.u.	0.1				0.0		3
Sample ID: H13060492-001ADUP		Sample Duplicate				Run: PHSC_101-H_130628A				06/28/13 11:58
pH		7.5	s.u.	0.1				0.4		3

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Barry Damschen

Report Date: 07/22/13

Project: Sanitation Inc Closed Landfill

Work Order: H13060493

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E245.1										Analytical Run: SUB-B207587
Sample ID: QCS										07/03/13 14:26
Mercury		0.00022	mg/L	1.0E-05	108	90	110			
Method: E245.1										Batch: B_72560
Sample ID: MB-72560										07/03/13 15:02
Mercury		ND	mg/L	3E-06						
Sample ID: LCS-72560										07/03/13 15:04
Mercury		0.00019	mg/L	1.0E-05	94	85	115			
Sample ID: B13070184-003DMS										07/03/13 15:31
Mercury		0.00015	mg/L	1.0E-05	74	70	130			
Sample ID: B13070184-003DMSD										07/03/13 15:34
Mercury		0.00015	mg/L	1.0E-05	74	70	130	0.7	30	
Method: E245.1										Analytical Run: SUB-B207688
Sample ID: QCS										07/05/13 13:48
Mercury		0.00021	mg/L	1.0E-05	104	90	110			
Method: E245.1										Batch: B_72592
Sample ID: MB-72592										07/05/13 13:57
Mercury		ND	mg/L	3E-06						
Sample ID: LCS-72592										07/05/13 13:59
Mercury		0.00020	mg/L	1.0E-05	99	85	115			
Sample ID: B13070184-005DMS										07/05/13 14:24
Mercury		0.00016	mg/L	1.0E-05	80	70	130			
Sample ID: B13070184-005DMSD										07/05/13 14:27
Mercury		0.00017	mg/L	1.0E-05	85	70	130	6.5	30	
Sample ID: B13070301-001AMS										07/05/13 14:55
Mercury		0.00020	mg/L	1.0E-05	98	70	130			
Sample ID: B13070301-001AMSD										07/05/13 14:58
Mercury		0.00020	mg/L	1.0E-05	98	70	130	0.5	30	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Barry Damschen

Report Date: 07/22/13

Project: Sanitation Inc Closed Landfill

Work Order: H13060493

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0										
Analytical Run: IC102-H_130703A										
Sample ID: ICV	2	Initial Calibration Verification Standard								07/03/13 12:23
Chloride		100	mg/L	1.0	103	90	110			
Sulfate		410	mg/L	1.0	102	90	110			
Sample ID: CCV070313-2	2	Continuing Calibration Verification Standard								07/03/13 15:44
Chloride		100	mg/L	1.0	100	90	110			
Sulfate		400	mg/L	1.0	100	90	110			
Method: E300.0										
Batch: R89526										
Sample ID: ICB	2	Method Blank								07/03/13 12:36
Chloride		ND	mg/L	0.008						
Sulfate		ND	mg/L	0.08						
Sample ID: LFB	2	Laboratory Fortified Blank								07/03/13 12:48
Chloride		53	mg/L	1.0	105	90	110			
Sulfate		210	mg/L	1.0	106	90	110			
Sample ID: H13060492-005AMS	2	Sample Matrix Spike								07/03/13 15:19
Chloride		170	mg/L	1.0	100	90	110			
Sulfate		890	mg/L	1.0	105	90	110			
Sample ID: H13060492-005AMSD	2	Sample Matrix Spike Duplicate								07/03/13 15:32
Chloride		170	mg/L	1.0	100	90	110	0.0	20	
Sulfate		900	mg/L	1.0	105	90	110	0.3	20	
Sample ID: H13070011-013AMS	2	Sample Matrix Spike								07/03/13 18:16
Chloride		6000	mg/L	28	119	90	110			S
Sulfate		46000	mg/L	11	99	90	110			
Sample ID: H13070011-013AMSD	2	Sample Matrix Spike Duplicate								07/03/13 18:28
Chloride		5900	mg/L	28	117	90	110	1.0	20	S
Sulfate		45000	mg/L	11	94	90	110	2.4	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Barry Damschen

Report Date: 07/22/13

Project: Sanitation Inc Closed Landfill

Work Order: H13060493

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E353.2										Analytical Run: FIA203-HE_130701A
Sample ID: ICB										07/01/13 15:10
Initial Calibration Verification Standard										
Nitrogen, Nitrate+Nitrite as N		1.00	mg/L	0.010	100	90	110			
Sample ID: ICB										07/01/13 15:15
Initial Calibration Blank, Instrument Blank										
Nitrogen, Nitrate+Nitrite as N		-0.00692	mg/L	0.010		0	0			
Sample ID: CCV										07/01/13 15:34
Continuing Calibration Verification Standard										
Nitrogen, Nitrate+Nitrite as N		0.486	mg/L	0.010	97	90	110			
Sample ID: CCV										07/01/13 16:00
Continuing Calibration Verification Standard										
Nitrogen, Nitrate+Nitrite as N		0.470	mg/L	0.010	94	90	110			
Method: E353.2										Batch: R89440
Sample ID: LFB										07/01/13 15:12
Laboratory Fortified Blank										
Nitrogen, Nitrate+Nitrite as N		1.01	mg/L	0.011	101	90	110			
Sample ID: MBLK										07/01/13 15:17
Method Blank										
Nitrogen, Nitrate+Nitrite as N		ND	mg/L	0.001						
Sample ID: H13060492-003BMS										07/01/13 15:56
Sample Matrix Spike										
Nitrogen, Nitrate+Nitrite as N		2.77	mg/L	0.022	86	90	110			S
Sample ID: H13060492-003BMDS										07/01/13 15:58
Sample Matrix Spike Duplicate										
Nitrogen, Nitrate+Nitrite as N		2.76	mg/L	0.022	85	90	110	0.3	20	S
Sample ID: H13060510-001DMS										07/01/13 16:06
Sample Matrix Spike										
Nitrogen, Nitrate+Nitrite as N		0.849	mg/L	0.010	85	90	110			S
Sample ID: H13060510-001DMDS										07/01/13 16:07
Sample Matrix Spike Duplicate										
Nitrogen, Nitrate+Nitrite as N		0.842	mg/L	0.010	84	90	110	0.9	20	S

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Barry Damschen

Report Date: 07/22/13

Project: Sanitation Inc Closed Landfill

Work Order: H13060493

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E410.4										Analytical Run: SPECTRO_130702A
Sample ID: CCV3_130702A										Continuing Calibration Verification Standard 07/02/13 15:30
Oxygen Demand, Chemical (COD)		51	mg/L	1	101	90	110			
Method: E410.4										Batch: 130702A-COD-W
Sample ID: LCS1_130702A										Laboratory Control Sample Run: SPECTRO_130702A 07/02/13 15:30
Oxygen Demand, Chemical (COD)		330	mg/L	5	109	90	110			
Sample ID: MBLK1_130702A										Method Blank Run: SPECTRO_130702A 07/02/13 15:30
Oxygen Demand, Chemical (COD)		1.0	mg/L	0.8						
Sample ID: H13060493-001BMS										Sample Matrix Spike Run: SPECTRO_130702A 07/02/13 15:30
Oxygen Demand, Chemical (COD)		68	mg/L	1	98	90	110			
Sample ID: H13060493-001BMSD										Sample Matrix Spike Duplicate Run: SPECTRO_130702A 07/02/13 15:30
Oxygen Demand, Chemical (COD)		69	mg/L	1	100	90	110	1.3	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Barry Damschen

Report Date: 07/22/13

Project: Sanitation Inc Closed Landfill

Work Order: H13060493

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: Kelada-01										
Sample ID: ICV Initial Calibration Verification Standard										
Cyanide, Total		0.0974	mg/L	0.0050	97	90	110			07/08/13 10:34
Method: Kelada-01										
Sample ID: LFB Laboratory Fortified Blank										
Cyanide, Total		0.0952	mg/L	0.0050	95	90	110			07/08/13 10:37
Sample ID: MB Method Blank										
Cyanide, Total		ND	mg/L	0.002						07/08/13 10:40
Sample ID: B13070184-003CMS Sample Matrix Spike										
Cyanide, Total		0.102	mg/L	0.0050	102	90	110			07/08/13 11:31
Sample ID: B13070184-003CMSD Sample Matrix Spike Duplicate										
Cyanide, Total		0.101	mg/L	0.0050	101	90	110	0.5	10	07/08/13 11:34
Sample ID: B13070003-001BMS Sample Matrix Spike										
Cyanide, Total		0.0980	mg/L	0.0050	98	90	110			07/08/13 10:45
Sample ID: B13070003-001BMSD Sample Matrix Spike Duplicate										
Cyanide, Total		0.100	mg/L	0.0050	100	90	110	2.2	10	07/08/13 10:48
Sample ID: B13070208-006EMS Sample Matrix Spike										
Cyanide, Total		0.105	mg/L	0.0050	105	90	110			07/08/13 12:17
Sample ID: B13070208-006EMSD Sample Matrix Spike Duplicate										
Cyanide, Total		0.106	mg/L	0.0050	105	90	110	0.2	10	07/08/13 12:19

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Barry Damschen

Report Date: 07/22/13

Project: Sanitation Inc Closed Landfill

Work Order: H13060493

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020		Analytical Run: ICPMS204-B_130709C								
Sample ID: ICV STD		14 Initial Calibration Verification Standard								07/09/13 11:56
Antimony		0.0615	mg/L	0.0010	103	90	110			
Arsenic		0.0609	mg/L	0.0010	101	90	110			
Barium		0.0625	mg/L	0.0010	104	90	110			
Beryllium		0.0311	mg/L	0.0010	104	90	110			
Chromium		0.0625	mg/L	0.0010	104	90	110			
Cobalt		0.0660	mg/L	0.0010	110	90	110			
Copper		0.0633	mg/L	0.0010	106	90	110			
Lead		0.0626	mg/L	0.0010	104	90	110			
Nickel		0.0635	mg/L	0.0010	106	90	110			
Selenium		0.0630	mg/L	0.0010	105	90	110			
Silver		0.0313	mg/L	0.0010	104	90	110			
Thallium		0.0582	mg/L	0.0010	97	90	110			
Vanadium		0.0612	mg/L	0.0010	102	90	110			
Zinc		0.0636	mg/L	0.0010	106	90	110			
Method: SW6020		Batch: R89633								
Sample ID: ICB		14 Method Blank								07/09/13 13:20
		Run: ICPMS204-B_130709C								
Antimony		ND	mg/L	2E-05						
Arsenic		ND	mg/L	7E-05						
Barium		ND	mg/L	5E-05						
Beryllium		ND	mg/L	2E-05						
Chromium		ND	mg/L	4E-05						
Cobalt		ND	mg/L	2E-05						
Copper		7E-05	mg/L	3E-05						
Lead		7E-06	mg/L	6E-06						
Nickel		ND	mg/L	6E-05						
Selenium		ND	mg/L	5E-05						
Silver		ND	mg/L	4E-05						
Thallium		ND	mg/L	1E-05						
Vanadium		ND	mg/L	2E-05						
Zinc		0.001	mg/L	0.0003						
Sample ID: LFB		14 Laboratory Fortified Blank								07/09/13 13:36
		Run: ICPMS204-B_130709C								
Antimony		0.0517	mg/L	0.0010	103	80	120			
Arsenic		0.0543	mg/L	0.0010	109	80	120			
Barium		0.0527	mg/L	0.0010	105	80	120			
Beryllium		0.0511	mg/L	0.0010	102	80	120			
Chromium		0.0539	mg/L	0.0010	108	80	120			
Cobalt		0.0556	mg/L	0.0010	111	80	120			
Copper		0.0553	mg/L	0.0010	110	80	120			
Lead		0.0534	mg/L	0.0010	107	80	120			
Nickel		0.0549	mg/L	0.0010	110	80	120			
Selenium		0.0562	mg/L	0.0010	112	80	120			
Silver		0.0213	mg/L	0.0010	106	80	120			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Barry Damschen

Report Date: 07/22/13

Project: Sanitation Inc Closed Landfill

Work Order: H13060493

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020										
Sample ID: LFB 14 Laboratory Fortified Blank										
						Run: ICPMS204-B_130709C		Batch: R89633		
Thallium		0.0509	mg/L	0.0010	102	80	120			07/09/13 13:36
Vanadium		0.0525	mg/L	0.0010	105	80	120			
Zinc		0.0573	mg/L	0.0010	112	80	120			
Sample ID: H13060492-001DMS 14 Sample Matrix Spike										
						Run: ICPMS204-B_130709C		07/10/13 00:35		
Antimony		0.270	mg/L	0.0010	108	75	125			
Arsenic		0.272	mg/L	0.0010	108	75	125			
Barium		0.283	mg/L	0.050	108	75	125			
Beryllium		0.253	mg/L	0.0010	101	75	125			
Chromium		0.258	mg/L	0.0050	103	75	125			
Cobalt		0.281	mg/L	0.0050	112	75	125			
Copper		0.272	mg/L	0.0050	108	75	125			
Lead		0.272	mg/L	0.0010	109	75	125			
Nickel		0.265	mg/L	0.0050	106	75	125			
Selenium		0.278	mg/L	0.0010	110	75	125			
Silver		0.106	mg/L	0.0010	105	75	125			
Thallium		0.262	mg/L	0.00050	105	75	125			
Vanadium		0.260	mg/L	0.010	103	75	125			
Zinc		0.276	mg/L	0.010	101	75	125			
Sample ID: H13060492-001DMSD 14 Sample Matrix Spike Duplicate										
						Run: ICPMS204-B_130709C		07/10/13 00:39		
Antimony		0.267	mg/L	0.0010	107	75	125	0.8	20	
Arsenic		0.270	mg/L	0.0010	107	75	125	0.5	20	
Barium		0.281	mg/L	0.050	108	75	125	0.5	20	
Beryllium		0.255	mg/L	0.0010	102	75	125	0.9	20	
Chromium		0.258	mg/L	0.0050	103	75	125	0.2	20	
Cobalt		0.276	mg/L	0.0050	110	75	125	1.7	20	
Copper		0.270	mg/L	0.0050	108	75	125	0.8	20	
Lead		0.272	mg/L	0.0010	109	75	125	0.0	20	
Nickel		0.265	mg/L	0.0050	106	75	125	0.0	20	
Selenium		0.279	mg/L	0.0010	111	75	125	0.6	20	
Silver		0.106	mg/L	0.0010	106	75	125	0.2	20	
Thallium		0.263	mg/L	0.00050	105	75	125	0.4	20	
Vanadium		0.256	mg/L	0.010	102	75	125	1.4	20	
Zinc		0.280	mg/L	0.010	103	75	125	1.7	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Barry Damschen

Report Date: 07/22/13

Project: Sanitation Inc Closed Landfill

Work Order: H13060493

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020								Analytical Run: ICPMS204-B_130711B		
Sample ID: ICV STD		Initial Calibration Verification Standard								07/11/13 09:54
Iron		0.323	mg/L	0.0010	108	90	110			
Sample ID: ICV STD		Initial Calibration Verification Standard								07/12/13 09:28
Iron		0.321	mg/L	0.0010	107	90	110			
Method: SW6020								Batch: R89680		
Sample ID: ICB		Method Blank		Run: ICPMS204-B_130711B				07/11/13 10:31		
Iron		0.001	mg/L	0.0002						
Sample ID: LFB		Laboratory Fortified Blank		Run: ICPMS204-B_130711B				07/11/13 10:36		
Iron		0.164	mg/L	0.0010	109	80	120			
Sample ID: H13060492-001DMS		Sample Matrix Spike		Run: ICPMS204-B_130711B				07/12/13 16:02		
Iron		0.868	mg/L	0.030	110	75	125			
Sample ID: H13060492-001DMSD		Sample Matrix Spike Duplicate		Run: ICPMS204-B_130711B				07/12/13 16:07		
Iron		0.852	mg/L	0.030	108	75	125	1.9	20	
Method: SW6020								Analytical Run: ICPMS204-B_130716B		
Sample ID: ICV STD		Initial Calibration Verification Standard								07/16/13 11:41
Cadmium		0.0318	mg/L	0.0010	106	90	110			
Sample ID: ICV STD		Initial Calibration Verification Standard								07/17/13 00:59
Cadmium		0.0326	mg/L	0.0010	109	90	110			
Sample ID: ICV STD		Initial Calibration Verification Standard								07/17/13 09:50
Cadmium		0.0324	mg/L	0.0010	108	90	110			
Sample ID: ICV STD		Initial Calibration Verification Standard								07/18/13 09:04
Cadmium		0.0328	mg/L	0.0010	109	90	110			
Sample ID: ICV STD		Initial Calibration Verification Standard								07/18/13 16:56
Cadmium		0.0323	mg/L	0.0010	108	90	110			
Method: SW6020								Batch: R89801		
Sample ID: ICB		Method Blank		Run: ICPMS204-B_130716B				07/16/13 14:56		
Cadmium		ND	mg/L	7E-06						
Sample ID: LFB		Laboratory Fortified Blank		Run: ICPMS204-B_130716B				07/16/13 15:01		
Cadmium		0.0542	mg/L	0.0010	108	80	120			
Sample ID: H13070156-001DMS		Sample Matrix Spike		Run: ICPMS204-B_130716B				07/17/13 03:01		
Cadmium		0.104	mg/L	0.0010	104	75	125			
Sample ID: H13070156-001DMSD		Sample Matrix Spike Duplicate		Run: ICPMS204-B_130716B				07/17/13 03:05		
Cadmium		0.102	mg/L	0.0010	102	75	125	1.8	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Barry Damschen

Report Date: 07/22/13

Project: Sanitation Inc Closed Landfill

Work Order: H13060493

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R89587
Sample ID: 070213_CCV_4	54	Continuing Calibration Verification Standard								07/02/13 14:15
trans-1,4-Dichloro-2-butene		4.84	ug/L	1.0	97	70	130			
Acetone		46.0	ug/L	20	92	70	130			
Acrylonitrile		45.6	ug/L	20	91	70	130			
Benzene		4.40	ug/L	1.0	88	70	130			
Bromochloromethane		4.68	ug/L	1.0	94	70	130			
Bromodichloromethane		5.48	ug/L	1.0	110	70	130			
Bromoform		4.84	ug/L	1.0	97	70	130			
Bromomethane		4.20	ug/L	1.0	84	70	130			
Carbon disulfide		5.00	ug/L	1.0	100	70	130			
Carbon tetrachloride		4.92	ug/L	1.0	98	70	130			
Chlorobenzene		5.08	ug/L	1.0	102	70	130			
Chlorodibromomethane		4.88	ug/L	1.0	98	70	130			
Chloroethane		4.80	ug/L	1.0	96	70	130			
Chloroform		4.80	ug/L	1.0	96	80	120			
Chloromethane		3.60	ug/L	1.0	72	70	130			
1,2-Dibromo-3-chloropropane		5.20	ug/L	1.0	104	70	130			
1,2-Dibromoethane		4.44	ug/L	1.0	89	70	130			
Dibromomethane		5.32	ug/L	1.0	106	70	130			
1,2-Dichlorobenzene		5.00	ug/L	1.0	100	70	130			
1,4-Dichlorobenzene		4.80	ug/L	1.0	96	70	130			
Dichlorodifluoromethane		4.72	ug/L	1.0	94	70	130			
1,1-Dichloroethane		4.88	ug/L	1.0	98	70	130			
1,2-Dichloroethane		5.04	ug/L	1.0	101	70	130			
1,1-Dichloroethene		4.32	ug/L	1.0	86	80	120			
cis-1,2-Dichloroethene		4.92	ug/L	1.0	98	70	130			
trans-1,2-Dichloroethene		4.76	ug/L	1.0	95	70	130			
1,2-Dichloropropane		5.52	ug/L	1.0	110	80	120			
cis-1,3-Dichloropropene		5.56	ug/L	1.0	111	70	130			
trans-1,3-Dichloropropene		5.60	ug/L	1.0	112	70	130			
Ethylbenzene		5.44	ug/L	1.0	109	80	120			
2-Hexanone		49.2	ug/L	20	98	70	130			
Iodomethane		5.04	ug/L	1.0	101	70	130			
Methyl ethyl ketone		48.0	ug/L	20	96	70	130			
Methyl isobutyl ketone		50.0	ug/L	20	100	70	130			
Methylene chloride		5.04	ug/L	1.0	101	70	130			
Styrene		4.80	ug/L	1.0	96	70	130			
1,1,1,2-Tetrachloroethane		4.64	ug/L	1.0	93	70	130			
1,1,2,2-Tetrachloroethane		4.72	ug/L	1.0	94	70	130			
Tetrachloroethene		5.68	ug/L	1.0	114	70	130			
Toluene		5.48	ug/L	1.0	110	80	120			
1,1,1-Trichloroethane		4.96	ug/L	1.0	99	70	130			
1,1,2-Trichloroethane		5.04	ug/L	1.0	101	70	130			
Trichloroethene		5.92	ug/L	1.0	118	70	130			
Trichlorofluoromethane		4.60	ug/L	1.0	92	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Barry Damschen

Report Date: 07/22/13

Project: Sanitation Inc Closed Landfill

Work Order: H13060493

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B								Analytical Run: R89587		
Sample ID: 070213_CCV_4								07/02/13 14:15		
54 Continuing Calibration Verification Standard										
1,2,3-Trichloropropane		5.32	ug/L	1.0	106	70	130			
Vinyl acetate		4.40	ug/L	1.0	88	70	130			
Vinyl chloride		5.36	ug/L	1.0	107	80	120			
m+p-Xylenes		10.6	ug/L	1.0	106	70	130			
o-Xylene		5.64	ug/L	1.0	113	70	130			
Xylenes, Total		16.2	ug/L	1.0	108	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	106	69	131			
Surr: Dibromofluoromethane				1.0	108	70	125			
Surr: p-Bromofluorobenzene				1.0	101	76	123			
Surr: Toluene-d8				1.0	104	80	119			
Method: SW8260B								Batch: R89587		
Sample ID: 070213_LCS_5								07/02/13 15:00		
54 Laboratory Control Sample								Run: 1SATURN_130702A		
trans-1,4-Dichloro-2-butene		5.32	ug/L	1.0	106	67	132			
Acetone		46.0	ug/L	20	92	55	144			
Acrylonitrile		43.6	ug/L	20	87	63	134			
Benzene		4.24	ug/L	1.0	85	69	129			
Bromochloromethane		4.44	ug/L	1.0	89	72	125			
Bromodichloromethane		5.24	ug/L	1.0	105	71	122			
Bromoform		5.08	ug/L	1.0	102	65	130			
Bromomethane		4.96	ug/L	1.0	99	60	136			
Carbon disulfide		4.32	ug/L	1.0	86	71	135			
Carbon tetrachloride		5.08	ug/L	1.0	102	77	121			
Chlorobenzene		4.92	ug/L	1.0	98	78	120			
Chlorodibromomethane		4.68	ug/L	1.0	94	70	122			
Chloroethane		5.36	ug/L	1.0	107	62	135			
Chloroform		4.48	ug/L	1.0	90	71	121			
Chloromethane		4.20	ug/L	1.0	84	66	139			
1,2-Dibromo-3-chloropropane		5.68	ug/L	1.0	114	59	130			
1,2-Dibromoethane		4.24	ug/L	1.0	85	60	137			
Dibromomethane		5.32	ug/L	1.0	106	69	122			
1,2-Dichlorobenzene		4.76	ug/L	1.0	95	74	122			
1,4-Dichlorobenzene		4.92	ug/L	1.0	98	75	122			
Dichlorodifluoromethane		4.56	ug/L	1.0	91	57	144			
1,1-Dichloroethane		4.72	ug/L	1.0	94	76	125			
1,2-Dichloroethane		4.96	ug/L	1.0	73	69	131			
1,1-Dichloroethene		4.24	ug/L	1.0	85	67	129			
cis-1,2-Dichloroethene		4.92	ug/L	1.0	98	75	122			
trans-1,2-Dichloroethene		4.68	ug/L	1.0	94	75	124			
1,2-Dichloropropane		5.08	ug/L	1.0	102	75	127			
cis-1,3-Dichloropropene		5.76	ug/L	1.0	115	73	124			
trans-1,3-Dichloropropene		5.72	ug/L	1.0	114	72	127			
Ethylbenzene		5.60	ug/L	1.0	112	74	125			
2-Hexanone		53.2	ug/L	20	106	70	128			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Barry Damschen

Report Date: 07/22/13

Project: Sanitation Inc Closed Landfill

Work Order: H13060493

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										
Batch: R89587										
Sample ID: 070213_LCS_5	54	Laboratory Control Sample				Run: 1SATURN_130702A		07/02/13 15:00		
Iodomethane		3.47	ug/L	1.0	69	52	130			
Methyl ethyl ketone		44.0	ug/L	20	88	56	141			
Methyl isobutyl ketone		52.4	ug/L	20	105	71	121			
Methylene chloride		4.40	ug/L	1.0	88	61	125			
Styrene		5.08	ug/L	1.0	102	75	120			
1,1,1,2-Tetrachloroethane		4.80	ug/L	1.0	96	76	122			
1,1,2,2-Tetrachloroethane		4.88	ug/L	1.0	98	67	124			
Tetrachloroethene		5.80	ug/L	1.0	116	75	126			
Toluene		5.60	ug/L	1.0	112	73	122			
1,1,1-Trichloroethane		4.88	ug/L	1.0	98	76	124			
1,1,2-Trichloroethane		4.88	ug/L	1.0	98	72	125			
Trichloroethene		5.76	ug/L	1.0	115	72	126			
Trichlorofluoromethane		4.84	ug/L	1.0	97	73	131			
1,2,3-Trichloropropane		4.44	ug/L	1.0	89	58	142			
Vinyl acetate		6.56	ug/L	1.0	131	47	154			
Vinyl chloride		5.48	ug/L	1.0	110	69	129			
m+p-Xylenes		10.0	ug/L	1.0	100	72	124			
o-Xylene		5.36	ug/L	1.0	107	74	123			
Xylenes, Total		15.4	ug/L	1.0	102	72	124			
Surr: 1,2-Dichloroethane-d4				1.0	100	69	131			
Surr: Dibromofluoromethane				1.0	107	70	125			
Surr: p-Bromofluorobenzene				1.0	106	76	123			
Surr: Toluene-d8				1.0	106	80	119			
Sample ID: 070213-MBLK_7										
54 Method Blank										
Run: 1SATURN_130702A										
07/02/13 16:18										
trans-1,4-Dichloro-2-butene		ND	ug/L	1.0						
Acetone		ND	ug/L	20						
Acrylonitrile		ND	ug/L	20						
Benzene		ND	ug/L	1.0						
Bromochloromethane		ND	ug/L	1.0						
Bromodichloromethane		ND	ug/L	1.0						
Bromoform		ND	ug/L	1.0						
Bromomethane		ND	ug/L	1.0						
Carbon disulfide		ND	ug/L	1.0						
Carbon tetrachloride		ND	ug/L	1.0						
Chlorobenzene		ND	ug/L	1.0						
Chlorodibromomethane		ND	ug/L	1.0						
Chloroethane		ND	ug/L	1.0						
Chloroform		ND	ug/L	1.0						
Chloromethane		ND	ug/L	1.0						
1,2-Dibromo-3-chloropropane		ND	ug/L	1.0						
1,2-Dibromoethane		ND	ug/L	1.0						
Dibromomethane		ND	ug/L	1.0						
1,2-Dichlorobenzene		ND	ug/L	1.0						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Barry Damschen

Report Date: 07/22/13

Project: Sanitation Inc Closed Landfill

Work Order: H13060493

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R89587
Sample ID: 070213-MBLK_7	54	Method Blank		Run: 1SATURN_130702A				07/02/13 16:18		
1,4-Dichlorobenzene		ND	ug/L	1.0						
Dichlorodifluoromethane		ND	ug/L	1.0						
1,1-Dichloroethane		ND	ug/L	1.0						
1,2-Dichloroethane		ND	ug/L	1.0						
1,1-Dichloroethene		ND	ug/L	1.0						
cis-1,2-Dichloroethene		ND	ug/L	1.0						
trans-1,2-Dichloroethene		ND	ug/L	1.0						
1,2-Dichloropropane		ND	ug/L	1.0						
cis-1,3-Dichloropropene		ND	ug/L	1.0						
trans-1,3-Dichloropropene		ND	ug/L	1.0						
Ethylbenzene		ND	ug/L	1.0						
2-Hexanone		ND	ug/L	20						
Iodomethane		ND	ug/L	1.0						
Methyl ethyl ketone		ND	ug/L	20						
Methyl isobutyl ketone		ND	ug/L	20						
Methylene chloride		ND	ug/L	1.0						
Styrene		ND	ug/L	1.0						
1,1,1,2-Tetrachloroethane		ND	ug/L	1.0						
1,1,2,2-Tetrachloroethane		ND	ug/L	1.0						
Tetrachloroethene		ND	ug/L	1.0						
Toluene		ND	ug/L	1.0						
1,1,1-Trichloroethane		ND	ug/L	1.0						
1,1,2-Trichloroethane		ND	ug/L	1.0						
Trichloroethene		ND	ug/L	1.0						
Trichlorofluoromethane		ND	ug/L	1.0						
1,2,3-Trichloropropane		ND	ug/L	1.0						
Vinyl acetate		ND	ug/L	1.0						
Vinyl chloride		ND	ug/L	1.0						
m+p-Xylenes		ND	ug/L	1.0						
o-Xylene		ND	ug/L	1.0						
Xylenes, Total		ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4				1.0	95	69	131			
Surr: Dibromofluoromethane				1.0	110	70	125			
Surr: p-Bromofluorobenzene				1.0	105	76	123			
Surr: Toluene-d8				1.0	103	80	119			
Sample ID: H13060406-026EMS	54	Sample Matrix Spike		Run: 1SATURN_130702A				07/03/13 00:36		
trans-1,4-Dichloro-2-butene		264	ug/L	25	106	67	132			
Acetone		1880	ug/L	1000	75	55	144			
Acrylonitrile		2120	ug/L	1000	85	63	134			
Benzene		980	ug/L	25	158	69	129			S
Bromochloromethane		210	ug/L	25	84	72	125			
Bromodichloromethane		254	ug/L	25	102	71	122			
Bromoform		244	ug/L	25	98	65	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Barry Damschen

Report Date: 07/22/13

Project: Sanitation Inc Closed Landfill

Work Order: H13060493

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R89587
Sample ID: H13060406-026EMS	54	Sample Matrix Spike			Run: 1SATURN_130702A			07/03/13 00:36		
Bromomethane		254	ug/L	25	102	60	136			
Carbon disulfide		202	ug/L	25	81	71	135			
Carbon tetrachloride		252	ug/L	25	101	77	121			
Chlorobenzene		216	ug/L	25	86	78	120			
Chlorodibromomethane		218	ug/L	25	87	70	122			
Chloroethane		238	ug/L	25	95	62	135			
Chloroform		222	ug/L	25	89	71	121			
Chloromethane		191	ug/L	25	76	66	139			
1,2-Dibromo-3-chloropropane		242	ug/L	25	97	59	130			
1,2-Dibromoethane		200	ug/L	25	80	60	137			
Dibromomethane		244	ug/L	25	98	69	122			
1,2-Dichlorobenzene		222	ug/L	25	89	74	122			
1,4-Dichlorobenzene		242	ug/L	25	97	75	122			
Dichlorodifluoromethane		224	ug/L	25	90	57	144			
1,1-Dichloroethane		238	ug/L	25	95	76	125			
1,2-Dichloroethane		248	ug/L	25	99	69	131			
1,1-Dichloroethene		222	ug/L	25	89	67	129			
cis-1,2-Dichloroethene		246	ug/L	25	98	75	122			
trans-1,2-Dichloroethene		240	ug/L	25	96	75	124			
1,2-Dichloropropane		260	ug/L	25	104	75	127			
cis-1,3-Dichloropropene		252	ug/L	25	101	73	124			
trans-1,3-Dichloropropene		234	ug/L	25	94	72	127			
Ethylbenzene		270	ug/L	25	108	74	125			
2-Hexanone		2280	ug/L	1000	91	70	128			
Iodomethane		173	ug/L	25	69	52	130			
Methyl ethyl ketone		1780	ug/L	1000	71	56	141			
Methyl isobutyl ketone		2360	ug/L	1000	94	71	121			
Methylene chloride		234	ug/L	25	94	61	125			
Styrene		234	ug/L	25	94	75	120			
1,1,1,2-Tetrachloroethane		216	ug/L	25	86	76	122			
1,1,2,2-Tetrachloroethane		238	ug/L	25	95	67	124			
Tetrachloroethene		246	ug/L	25	98	75	126			
Toluene		592	ug/L	25	237	73	122			S
1,1,1-Trichloroethane		248	ug/L	25	99	76	124			
1,1,2-Trichloroethane		230	ug/L	25	92	72	125			
Trichloroethene		290	ug/L	25	116	72	126			
Trichlorofluoromethane		228	ug/L	25	91	73	131			
1,2,3-Trichloropropane		246	ug/L	25	98	58	142			
Vinyl acetate		304	ug/L	25	122	47	154			
Vinyl chloride		232	ug/L	25	93	69	129			
m+p-Xylenes		744	ug/L	25	149	72	124			S
o-Xylene		470	ug/L	25	139	74	123			S
Xylenes, Total		1210	ug/L	50	146	72	124			S
Surr: 1,2-Dichloroethane-d4				50	101	69	131			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Barry Damschen

Report Date: 07/22/13

Project: Sanitation Inc Closed Landfill

Work Order: H13060493

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R89587
Sample ID: H13060406-026EMS	54	Sample Matrix Spike		Run: 1SATURN_130702A				07/03/13 00:36		
Surr: Dibromofluoromethane				50	113	70	125			
Surr: p-Bromofluorobenzene				50	106	76	123			
Surr: Toluene-d8				50	104	80	119			
- 2-Chloroethyl vinyl ether will degrade in acid-preserved samples.										
Sample ID: H13060406-026EMSD	54	Sample Matrix Spike Duplicate		Run: 1SATURN_130702A				07/03/13 01:06		
trans-1,4-Dichloro-2-butene		284	ug/L	25	114	67	132	7.3	20	
Acetone		2100	ug/L	1000	84	55	144	11	20	
Acrylonitrile		2340	ug/L	1000	94	63	134	9.9	20	
Benzene		1010	ug/L	25	170	69	129	3.2	20	S
Bromochloromethane		220	ug/L	25	88	72	125	4.7	20	
Bromodichloromethane		266	ug/L	25	106	71	122	4.6	20	
Bromoform		246	ug/L	25	98	65	130	0.8	20	
Bromomethane		306	ug/L	25	122	60	136	19	20	
Carbon disulfide		212	ug/L	25	85	71	135	4.8	20	
Carbon tetrachloride		248	ug/L	25	99	77	121	1.6	20	
Chlorobenzene		218	ug/L	25	87	78	120	0.9	20	
Chlorodibromomethane		236	ug/L	25	94	70	122	7.9	20	
Chloroethane		252	ug/L	25	101	62	135	5.7	20	
Chloroform		232	ug/L	25	93	71	121	4.4	20	
Chloromethane		204	ug/L	25	82	66	139	6.5	20	
1,2-Dibromo-3-chloropropane		258	ug/L	25	103	59	130	6.4	20	
1,2-Dibromoethane		218	ug/L	25	87	60	137	8.6	20	
Dibromomethane		262	ug/L	25	105	69	122	7.1	20	
1,2-Dichlorobenzene		234	ug/L	25	94	74	122	5.3	20	
1,4-Dichlorobenzene		244	ug/L	25	98	75	122	0.8	20	
Dichlorodifluoromethane		230	ug/L	25	92	57	144	2.6	20	
1,1-Dichloroethane		258	ug/L	25	103	76	125	8.1	20	
1,2-Dichloroethane		258	ug/L	25	103	69	131	4.0	20	
1,1-Dichloroethene		234	ug/L	25	94	67	129	5.3	20	
cis-1,2-Dichloroethene		238	ug/L	25	95	75	122	3.3	20	
trans-1,2-Dichloroethene		260	ug/L	25	104	75	124	8.0	20	
1,2-Dichloropropane		284	ug/L	25	114	75	127	8.8	20	
cis-1,3-Dichloropropene		260	ug/L	25	104	73	124	3.1	20	
trans-1,3-Dichloropropene		240	ug/L	25	96	72	127	2.5	20	
Ethylbenzene		258	ug/L	25	103	74	125	4.5	20	
2-Hexanone		2480	ug/L	1000	99	70	128	8.4	20	
Iodomethane		176	ug/L	25	70	52	130	1.9	20	
Methyl ethyl ketone		2280	ug/L	1000	91	56	141	25	20	R
Methyl isobutyl ketone		2600	ug/L	1000	104	71	121	9.7	20	
Methylene chloride		260	ug/L	25	104	61	125	11	20	
Styrene		238	ug/L	25	95	75	120	1.7	20	
1,1,1,2-Tetrachloroethane		238	ug/L	25	95	76	122	9.7	20	
1,1,2,2-Tetrachloroethane		264	ug/L	25	106	67	124	10	20	
Tetrachloroethene		258	ug/L	25	103	75	126	4.8	20	

Qualifiers:

RL - Analyte reporting limit.

R - RPD exceeds advisory limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Barry Damschen

Report Date: 07/22/13

Project: Sanitation Inc Closed Landfill

Work Order: H13060493

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R89587
Sample ID: H13060406-026EMSD 54 Sample Matrix Spike Duplicate										Run: 1SATURN_130702A 07/03/13 01:06
Toluene		422	ug/L	25	169	73	122	34	20	SR
1,1,1-Trichloroethane		252	ug/L	25	101	76	124	1.6	20	
1,1,2-Trichloroethane		250	ug/L	25	100	72	125	8.3	20	
Trichloroethene		282	ug/L	25	113	72	126	2.8	20	
Trichlorofluoromethane		228	ug/L	25	91	73	131	0.0	20	
1,2,3-Trichloropropane		270	ug/L	25	108	58	142	9.3	20	
Vinyl acetate		344	ug/L	25	138	47	154	12	20	
Vinyl chloride		246	ug/L	25	98	69	129	5.9	20	
m+p-Xylenes		580	ug/L	25	116	72	124	25	20	R
o-Xylene		400	ug/L	25	111	74	123	16	20	
Xylenes, Total		980	ug/L	50	114	72	124	21	20	R
Surr: 1,2-Dichloroethane-d4				50	108	69	131			
Surr: Dibromofluoromethane				50	115	70	125			
Surr: p-Bromofluorobenzene				50	102	76	123			
Surr: Toluene-d8				50	102	80	119			

- 2-Chloroethyl vinyl ether will degrade in acid-preserved samples.

Qualifiers:

RL - Analyte reporting limit.

R - RPD exceeds advisory limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

Standard Reporting Procedures

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as -dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Workorder Receipt Checklist

Barry Damschen

H13060493

Login completed by: Tracy L. Lorash

Date Received: 6/28/2013

Reviewed by: BL2000\jweidemoyer

Received by: elm

Reviewed Date: 7/1/2013

Carrier Hand Del
name:

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☒
Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☐	No ☒	
Samples in proper container/bottle?	Yes ☒	No ☐	
Sample containers intact?	Yes ☐	No ☒	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☒	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☒	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	2.9°C On Ice		
Water - VOA vials have zero headspace?	Yes ☒	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☒	No ☐	Not Applicable ☐

Contact and Corrective Action Comments:

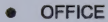
Collection date on nutrient bottle for SIMW-3D is 6/7 - COC has 6/27/13. Logged in with date from COC.
One voa for SIMW-3D was received broken. TI 6/27/13.

Chain of Custody and Analytical Request Record

Page ____ of ____

PLEASE PRINT (Provide as much information as possible.)

Company Name: <i>BARRY DAMSCHEN CONSULTING, LLC</i> Report Mail Address (Required): <i>553 UPRKRL Helena, MT 59602</i> ☐ No Hard Copy Email: Invoice Address (Required): <i>SAME AS ABOVE</i> ☐ No Hard Copy Email: Special Report/Formats: <i>As per Solid Waste</i> ☐ DW ☐ EDD/EDT (Electronic Data) ☐ POTW/WWTP ☐ Format: _____ ☒ State: <i>MT</i> ☐ LEVEL IV ☐ Other: _____ ☐ NELAC			Project Name, PWS, Permit, Etc.: <i>Sanitation Ina Closed Land Fill</i> Contact Name: <i>BARRY DAMSCHEN</i> Phone/Fax: <i>406-461-5003</i> Invoice Contact & Phone: <i>SAME AS ABOVE</i> Sample Origin: _____ State: <i>MT</i> Cell: _____ EPA/State Compliance: Yes ☒ No ☐ Sampler: (Please Print) <i>B. Damschen</i> Purchase Order: _____ Quote/Bottle Order: _____																																																																																																																																																																																																								
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="4">ANALYSIS REQUESTED</th> </tr> <tr> <td rowspan="10" style="writing-mode: vertical-rl; transform: rotate(180deg);"> Number of Containers Sample Type: AWSVBODW Air Water Solids/Solids Vegetation Bioassay Other DW - Drinking Water </td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">TAP ONE</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">VOC'S ONLY</td> <td></td> </tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> </table>			ANALYSIS REQUESTED				Number of Containers Sample Type: AWSVBODW Air Water Solids/Solids Vegetation Bioassay Other DW - Drinking Water	TAP ONE	VOC'S ONLY																													SEE ATTACHED R U S H Standard Turnaround (TAT) Contact ELI prior to RUSH sample submittal for charges and scheduling - See Instruction Page Comments: Shipped by: <i>Hand</i> Cooler ID(s): <i>Y</i> Receipt Temp: <i>2.9 °C</i> On Ice: ☒ Y ☐ N Custody Seal: On Bottle ☒ Y ☐ N, On Cooler ☒ Y ☐ N Intact: ☒ Y ☐ N Signature Match: ☒ Y ☐ N																																																																																																																																																																					
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